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ORIGINAL LECTURES.

ECTOPIC GESTATION.

An Address delivered before the Northumberland and Durham Medical Society, on October 4, 1889.

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MR. PRESIDENT AND GENTLEMEN: The subject of ectopic gestation, although rather a special one, occupying in the practice of each individual physician no very large place, is yet of great importance, for when such cases are met they place the practitioner in a position of enormous responsibility, occurring as they do in the most unexpected ways and times; so that perhaps no subject is in reality of more interest to the general practitioner. Ectopic gestation has, too, this additional claim upon our attention, that although it lies in one of the by-paths of practice, still its mysteries have been unravelled in a remarkably short space of time, not only in pathology, but also in the method of dealing with it satisfactorily to the relief of suffering and the saving of human life.

The term *ectopic* gestation should be used to the exclusion of the older term extra-uterine gestation or pregnancy, for several reasons. First, because there is a special variety of this condition which is not covered by the term extra-uterine pregnancy, and it is always well when we change our nomenclature to do so in the direction of greater precision. We are in the habit of altering our nomenclature often enough from mere fancy. With each incoming school of pathology there comes a new system of nomenclature, with the result of confusing those who have just left the schools where the latest doctrines were taught.

I do not, therefore, propose this change without a sound reason for doing so, which is, because the variety of ectopic gestation known as the interstitial is brought within the scope of our term. Then, again, the cornual form of pregnancy was regarded as extra-uterine, which is in reality not the case, and it is undoubtedly ectopic. Therefore, as we have two conditions which are included in the word ectopic, and which are not included in the term extra-uterine gestation, I maintain that the new word ought altogether to replace the older for the sake of precision and comprehensiveness.

It is difficult in dealing with a subject like this, to see clearly the best line to follow. We may take either the pathological or the clinical classification, and I am not sure that the latter is not the best, as I am dealing with the subject for the purpose of helping those who have no time and no opportunity of following out the intricate details of pathological research, men who are engaged at the bedside, but to whom it is important to know what they ought to do. I will, therefore, follow a clinical course, for, although it may lead to some confusion of order, that disadvantage will be compensated for by clearness in addressing those to whom the subject is new, or to whom the term extra-uterine pregnancy simply involves a confused notion of a condition far different from that usually met with at the puerperal bedside.

What, then, is the commonest condition with which we have to deal in cases of ectopic gestation? It is unquestionably a catastrophe so terrible, that nothing can be compared with it short of a railway accident. One of your patients is suddenly seized with pain in the abdomen. The pain becomes more and more severe as the hours advance; she presents a strange, death-like pallor; she vomits as she lies on her back; the pulse disappears; the skin becomes cold and clammy, and though she is clearly dying, there is no very distinct ground upon which you can make your diagnosis, and until you inquire into the history you can be positive of nothing but the pain. So sudden is all this, that most of the men who have seen such cases have seen them pass to the post-mortem table or the grave without a complete diagnosis having been made.

Such are the appearances of a woman who is suffering from rupture of the more common form of ectopic gestation. Your patient dies, if not relieved, probably with the true condition unsuspected. A post-mortem examination is made, the abdomen is found full of blood, one Fallopian tube is found with a small swelling which is the source of the extravasation into the peritoneal cavity. You will find pints of semi-coagulated blood, and when you search for the source of the hemorrhage you discover it in a rent in the Fallopian tube, from the effects of which your patient has died. This is what we call a ruptured tubal pregnancy, and concerning the pathology of which the greatest confusion existed until very recently; in fact, I may say with regard to some of the senior members of the profession the confusion exists at the present time. In support of this assertion I may refer to a clinical lecture which appeared in the columns of the *Lancet* a few weeks since. The lecturer opened his observations with this remarkable sentence: "That only ignorant audacity could presume to make clear the pathology of extra-uterine pregnancy." Now, I do not know whether it is ignorant audacity of the one that can make such a charge, or ignorant audacity of the other for attempting to make clear that which was enveloped in obscurity; but if I can succeed in inducing you to believe that the pathology has been made clear, the treatment and practice successful, then my mission will have been accomplished. We had, until quite lately, an inherited belief that stood in the way of our understanding the pathology of these cases completely, or indeed at all. Many years ago experiments were made by Le Coste with the view of ascertaining the precise position at which the ovum and spermatozoa met and impregnation took place. Unfortunately Le Coste made his experiments upon animals with a bifid uterus, and this has been the source of all the trouble, for the human uterus is single, its bifidity being represented by struc-

tures which are not uterus at all—the Fallopian tubes. He found that impregnation took place high up in the bifid organ and wrongly thought that this was the Fallopian tube instead of the uterus. This led to the mistake that has existed so long. Normally, the Fallopian tube is lined by a layer of ciliated epithelium which was supposed to have for its function the sending of the ovum down into the uterus, and it was assumed that this function was fulfilled after the ovum had been impregnated. We cannot make experiments on human beings as upon the lower animals, but we have an unfortunate habit in many instances in making experiments upon the latter and neglecting a precaution which the physicist and the chemist always adopt, viz., of making sure that the conditions of the experiment are the same. Now, the conditions of the experiment in women would be found on careful examination not to be like those on animals, and the absence of this ciliated epithelium is the precise condition that was neglected. We know now, as nearly as possible, from the investigations of pathologists and from direct observations which will doubtless be completely elucidated before long, that another function of this ciliated epithelium is to prevent the entrance of the spermatozoa into the Fallopian tubes. So long as there is a layer of intact epithelium impregnation takes place only in the uterus. I will not go into the arguments upon this point, for the time will not permit, but some recent researches by A. W. Johnstone and Bland Sutton make the above statement very positive. This is the key-note of the subject which if once grasped makes all perfectly clear. When the Fallopian tube has been denuded of its layer of ciliated epithelium, these observations show clearly that its surface becomes exactly like that of the uterus, to which the ovum would normally become attached. If there has been a destruction of the ciliated layer which is not reproduced, then we have the possibility in the first place of a spermatozoön entering the tube, and, what is still more important, after impregnation the ovum may become attached to the walls of the tube, as it normally is to the walls of the uterus. These points granted, the whole matter becomes clear, notwithstanding the cries of "ignorant audacity."

We will assume, then, that this later pathology is an improvement upon the older, that impregnation takes place in the cavity of the tube, and that the attachment of the ovum takes place upon the wall, in consequence of the loss of the ciliated epithelium. Here, however, let me diverge into the clinical aspect for a moment, and tell you the usual history of these cases. The great majority of the cases occur in women who either have never been pregnant, though married for years, or who have had two or three children, followed by an interval of sterility of some years' duration. This one clinical fact shows clearly enough that the procreating mechanism was out of gear. Then the examination of the tubes will show distinct evidence of mischief. One authority, Dr. Griffith, of St. Bartholomew's Hospital, told me the other day that he was perfectly satisfied as to the correctness of my conclusions, that desquamative salpingitis had been well worked out and proved. In many instances, then, you have a clear history of tubal disease. I cannot go further into this point, because it would take up too much time, but the history generally shows that damage has been done to the tubes prior to the abnormal gestation. Here, then, we have one proof of the correctness of our views. We will now turn to the progress of each condition. Impregnation has taken place, the ovum has become attached to the walls of the tube and is growing. We have now to speak of the conditions based upon divisions of the tube, which are largely artificial, but, artificial though they be, they have many conveniences to recommend them. You are all familiar with the appearances and anatomy of the Fallopian tubes. You know that there is a small part which is buried in the uterine substance, that there is another part which is perfectly free, except that it is kept in place by a meso-salpinx, which is a duplicature of the peritoneum, running up one side and down the other, thus enveloping the tube, but allowing of perfect freedom of movement. Now, as this duplicature of the peritoneum is one of the most important structures in the whole female body, for the purposes of the present discussion I ask you to bear it well in mind. We then come to the division known as the infundibulum, which is supposed, at intervals more or less periodical, to be applied to the ovary for the purpose of receiving the ovum on its way into the uterus. Whether this view is correct or not, remains to be proved. At one time I myself believed that this did take place, but I am now disposed to regard it as mythical. It matters little, however, for our purpose whether it takes place or not.

Another point to be discussed is the view that impregnation sometimes takes place in the ovary, the spermatozoa travelling up the Fallopian tube, spreading themselves out over the ovary, and impregnating the ovum at the moment of its escape. This can be seen easily enough in the lower animals not provided with Fallopian tubes, and the error arose from the application of these observations to the human female. The proof rests upon the answer to this question: Does ovarian pregnancy ever occur? Is there such a variety of ectopic gestation as ovarian? Well, I have examined personally all the specimens to which I have had access, and have investigated every such case that has ever been put upon record, and all I can affirm is that, so far, no such occurrence has been proved to have taken place. The proof which we demand for an occurrence of this kind is, that a cavity be found in the structure of the ovary, the walls of the cyst consisting largely, if not entirely of ovarian tissue, as demonstrated by the microscope, and that the cyst contents consist largely of fœtal structure or placenta. If neither of these three conditions can be substantiated, the case must be put aside and disregarded as evidence. I do not mean to say that the thing is impossible, but I do say that, as yet, it has not been satisfactorily established. Some of the cases published as such, are based on ludicrously erroneous evidence. Not long ago, in the *Transactions of the American Gynecological Society*, a case was recorded which, from the history, was palpably a case of dermoid tumor of the ovary. Yet it is described and put on record as a case of ovarian pregnancy. Great care is therefore required in admitting such cases as evidence. It does not matter for clinical purposes whether it is proven or not. If it is, the subject is all the more interesting, but I do not suppose it would differ in its clinical relations from a tubal pregnancy. The patient would be exposed to the same dangers, and it would have to be dealt with in the same manner.

As regards tubal pregnancy, there is an ample supply

of specimens which prove its occurrence in all the three situations—the infundibulum, the middle part of the tube, and the interstitial part. Now, I may dismiss the interstitial variety with a few words. First of all, it is the rarest; for although I have had perhaps the largest experience of any one man with this curious displacement, I have only seen one such case, and I know of only six mounted specimens in this country in which this lesion indubitably exists. It is rare and inevitably fatal, for we get no notice as to when rupture is going to take place, and the patient dies before anything can be done. The period at which rupture takes place—that is, when the tube gives way—may be deferred as late as the sixth month, and seldom occurs before the fourth. The tissues are then so vascular that it is only a matter of a few minutes before the patient dies. Alluding particularly to my own case, I fail to see how any human power could have saved her, even if we had been there at the time. The condition is simple enough. An attachment of the ovum to the tube has taken place within the structure of the uterus. There it remains, expanding nearly always in an upward direction, and the rupture takes place at the fundus of the uterus. The tear is extensive, usually four or five inches in length, and the hemorrhage is consequently terrific. Nothing could save the patient but hysterectomy, and by the time the diagnosis is made all chance of an operation so grave as hysterectomy proving successful would be gone. The specimens I have seen are all identical in character, and it is very fortunate that a variety in which we can do so little, and in which the consequences are so terrible, should be so rare.

We may then pass on to the consideration of the other two varieties. I will dismiss the infundibulum variety by saying that it too is extremely rare. I only know of two well-authenticated cases—I will not say on record, for such cases are generally recorded by gentlemen who have too little experience with the methods to be followed in establishing these cases, and of the points to be demonstrated. Therefore, when we see figures, except by skilled anatomists or experts in pathology, we have to discount the statements made concerning them. For instance, Dr. Granville is quoted by Dr. Campbell, as having proved ovarian pregnancy up to the hilt, and actually quotes his pamphlet and plate as quite satisfactory. Now Dr. Granville's book is very rare, as it took me four or five years to find a copy. When I did so, I found the description was absolutely incorrect; there was nothing in the plate at all to represent either placental or fœtal tissue, and the text was as follows: "That Dr. Granville was assured by Sir James Clark that, thirty years before, he had seen a fœtus hanging free in the cavity." I have seen the specimen but can make nothing of it. Where the specimen is in a museum, properly put up, you can go back a century, as is the case with the specimens so admirably put up and described by Hunter. Therefore I say that there are only three such examples. It would matter very little, however, if there were more—they would be merely pathological curiosities. Its bearings are precisely the same as the variety now to be spoken of, viz., pregnancy in the middle part of the tube. Let me now remind you of the structure of the Fallopian tube, for this is a fact of the very greatest importance. There is the lining of mucous membrane covered with ciliated epithelium, and outside is the peritoneal investment. Between them are two clearly defined layers of muscular fibres, longitudinal and circular. The mucous surface is of importance, because its denudation, in our belief, is the primary cause of the misplacement. The muscular coat has probably some peristaltic action in assisting the ovum and fluids down the tube. This movement is often seen in operating upon the uterus for myoma, when the vermiform movement follows the removal of the tubes. Of all the layers, however, the peritoneal is of the greatest importance, for according to the way it behaves, or, rather, how it is treated, the ultimate issue depends. The ovum, to start again from the point of its growth, continues developing, and though it is true that the Fallopian tube is capable of a certain amount of distention, provided the walls are not damaged, the distention is limited. The tube is probably capable of the same amount of distention as the gall-bladder or the urinary bladder.

Peaslee narrates a case in which the Fallopian tube was dilated to such an extent as to hold thirty pounds of fluid. I have myself seen thirteen and fourteen ounces of fluid. On the walls of the tube, however, becomes developed an organ which weakens them—the placenta. The formation of large venous sinuses on the site of the implanted placenta diminishes the ability of the tube to distend, and it tears. This coincides with the formation of the "cake" of the placenta. Up to a certain point the placenta is diffused as a villous layer, but in about the eighth week it becomes restricted to one spot, when you get what is called the placental cake. I do not know that the development of this placental cake has an all-powerful influence in determining the rupture, but it certainly exercises some influence. The rupture always take place before the time of the limit of the formation of this placental cake, and the time of the rupture is, therefore, clearly limited to the twelfth week. I have never met with a specimen later than that. Now, the rupture may take place in one of two directions. In one case the placental cake may have formed upon the site where the layers of peritoneum meet, or, on the other hand, it may form upon some part of the wall which is closely surrounded by peritoneum. In the first instance, the rupture takes place into the broad ligament; in the latter, into the peritoneal cavity. Although I have been preaching on this subject for twelve years I have failed to get my professional brethren to see what an enormous difference this makes in the subsequent progress of the case. It means that if this hemorrhage takes place into the peritoneal cavity it is uncontrolled. If you put a bleeding surface under water you remove one of nature's great hæmostatics, coagulation. If you have bleeding into a confined space which is capable of only limited extension, especially if that space be filled by something that is capable of inducing coagulation, such as irregularly distributed muscular fibres, you have a strong means of arresting hemorrhage; whereas if the cavity be indefinite in its capacity there is a corresponding absence of the cause of coagulation. This is an explanation of the different endings of these cases. In rupture into the peritoneum the bleeding practically goes on unchecked. Every one knows that if a vessel has not been properly tied or if a ligature has slipped after ovariotomy, there are no means of checking the hemorrhage, because the blood does not properly coagulate, and a little vessel from an omental adhesion, which would not be of the

slightest consequence in an amputation, would be sufficient to cause death after an ovariotomy. You have thus in the one case every possible condition favorable to the continuation of the hemorrhage, while when the rupture takes place into the cavity of the broad ligament you have all the conditions favorable to the arrest of the hemorrhage. Hence the latter is rarely fatal. Here, then, we have a great natural difference between these two varieties of tubal pregnancy. One has no natural tendencies toward cure, and the other has all. In the one case you have to do with a patient who will die inevitably unless you interfere. In the other you have a condition which you may safely leave alone. In the one case you have hemorrhage into the peritoneal cavity, and in the other you have it extra-peritoneal into the broad ligament, and I think I have made it clear that the prognostic importance of the two is as different as can well be.

Now as to the diagnostic difference between the two. It is very simple, if you think for a moment what the relations of the broad ligament are.

You have to recognize two different varieties, one of intra-peritoneal and the other of extra-peritoneal hemorrhage. Now, intra-peritoneal hemorrhage may arise from various causes, such as injury, or from imperfectly checked bleeding after operation. But excluding such causes, and speaking from my own experience as a gynecologist, it has only one origin, and that is, rupture of a tubal pregnancy. Mark you, I do not say that there are no other causes, but I have never met with them. To my mind, for all practical purposes, intra-peritoneal hæmatocele and ruptured tubal pregnancy are one and the same thing. And now, what are the symptoms and physical signs? Concerning intra-peritoneal hemorrhage I may say, hardly any signs at all. You palpate gently and you have obscure fluctuation, very difficult to make out even when the amount of effused blood is large. Percussion gives nothing very remarkable. You get dulness here and resonance there, but nothing to indicate positively what is the precise condition. Vagially you feel an indistinct boggy swelling in Douglas's pouch, but there is nothing very clear about that either. The relations of Douglas's pouch are practically unaltered. In the extra-peritoneal variety there may be fifty different causes, such as sudden arrest of menstruation by chill, etc., but I fancy the worst cases I have seen of this kind have been caused by a tubal pregnancy rupturing into the broad ligament. Here the signs are positive, and in the first place you have a smooth, tense, rounded tumor in the pelvic region, sometimes reaching almost, or quite up to the umbilicus. This is the broad ligament dissected upward and distended by the effused blood. There is distinct fluctuation. On examination of the pelvis you have a condition which is absolutely distinctive, viz., the whole of the roof of the pelvis is fixed, and coming down from each side of the uterus you have processes of induration extending. You have a more or less flat-topped roof and pillars down each side, which indicate the burrowing of the blood along the pelvic fascia. Then there is another condition almost certain to occur if the case be a severe one, viz., stricture of the rectum. I had such a case yesterday. Remember that the broad ligament comes off from the uterus, it gradually opens one fold on either side of the rectum, and if blood dissects it up, one of the roads will be to the front of the rectum and around it, and you have an annular stricture of the rectum, which will not disappear for many months. Now let us go back to the history. First, the history of sterility, then the suspicion of pregnancy. The patient *thinks* she is pregnant. There may be irregular discharges, sometimes profuse menorrhagia, but not often a clear history suggesting pregnancy. But if you have the acute condition, what you wish to determine is, is the blood in or out of the peritoneum? And this you can determine on the data which I have given you. If the symptoms are negative, then the hemorrhage is *inside* the peritoneum; if otherwise, then outside. I think now you will understand why one gets angry that men should constantly be saying that you are urging them to open an extra-uterine hæmatocele. I do nothing of the kind, except in one particular class of cases, viz., those in which the distention of the broad ligament is such that rupture has taken place into the peritoneum. Here the conditions are the same as in intra-peritoneal hemorrhage. I have never seen such a case, but if I had I would have treated it as if it were a primary rupture of the tube into the peritoneum.

Now, let me discuss the conditions of the second variety, the cases where rupture has taken place into the cavity of the broad ligament. These are most easily indicated and easily disposed of. In the act of rupture, the ovum is destroyed. The case then resolves itself into a simple broad ligament hæmatocele, which is to be left alone—which will be absorbed, though the convalescence will be prolonged. I advise you to leave these alone. Many of my brethren have bitterly regretted having tapped such hæmatoceles, because, if the pressure is lessened, you take away the hæmostatic effect of such pressure, the cyst will refill, and the woman will as surely die from loss of blood as if the hemorrhage had taken place into the peritoneum. The cases that go wrong are those that are injudiciously interfered with. If the blood is absorbed, there is an end of the trouble. Sometimes, perhaps in one among ten cases, the ovum is not killed, the hemorrhage being smaller. Then it goes on developing into a series of conditions which I will briefly run over.

It may go on into the fourth or fifth month, and the ovum die. This is a very common ending of the broad ligament pregnancy. When the ovum dies, it still should be absorbed, or it may suppurate, and then you get those extraordinary cases of abscess bursting into the bladder or rectum or at the umbilicus, with the discharge of fœtal bones at about the fourth or fifth month. These cases prove clearly enough where the fœtus has been; for, if you recall your anatomy, you will see that the places from which the discharge will take place are those of election in cases of abscess in the broad ligament from any cause. Its cavity is in immediate relation to the anterior wall of the rectum, and, therefore, the history of these cases is full of instances of discharge of the fœtal bones *per rectum;* less commonly into the bladder. Then, again, the fœtus may not die, but may go on to full time, distending the peritoneum—and it is extraordinary to what extent this can be carried on. Here is a diagram taken from a frozen specimen, in which the whole peritoneum is lifted off the anterior wall of the uterus and the posterior wall of the bladder, and then comes down about half-way between the umbilicus and

the pubes. After all, there is nothing wonderful about that when we reflect what takes place with the pregnant uterus. The whole of the fœtus, in such cases, is extra-uterine. There is nothing inside the peritoneum: proving that the view I took many years ago was the correct one, viz., that these full-time pregnancies were extra-peritoneal. This looks absurd; but Dr. Berry Hart's specimen proves it completely. One of his actual sections is before you, in order that you may have visible testimony of the accuracy of these views. Now, what must be done if it goes on to full time? The only course open to you is to operate and remove a living child. The older treatment was to give doses of morphia or use electricity to kill the child. But it must occur to all of you that even when they are killed they are not pleasant things to deal with. When suppuration takes place in the dead ovum, it may go on for years. Considering that we have now made five successful removals out of seven operations, I think that the moral question of procuring the death of the child is very serious. I do not pretend to be any better morally than my fellows, but I would not go out of my way to kill a child which had every right and every chance of living if we will only interfere. You must remember, too, that these ectopic children are probably the only children these women have. As to the prejudice of their being deformed, I can only say that I have three of them growing up around me, and they are healthy and well formed in every respect. I have never countenanced the employment of electricity in the treatment of these cases of extra-uterine pregnancy. I would let the electricians and others try their experiments, and when they come forward with better results than mine I will retire. I receive with as much respect as possible the statement as to the value of electricity in the treatment of these cases, but I am content to go on my own way, and await the judgment of my fellows. At any rate, it is perfectly certain that if you attempt to kill the fœtus before the rupture takes place, you may have good grounds for what you say; the idea is feasible enough. Given a case of tubal pregnancy before rupture of the tube: kill the fœtus, and you may save your patient the risk of a rupture. But there is a hitch, and it is this: I have now seen some thirty cases of tubal gestation, and I have had a chance of examining but one before the rupture had taken place. The first we know of these cases is, the patient lying on her back, with her legs drawn up, collapsed, and suffering agony. Of course, if the electricians can spot these women as they are walking along the street, well and good; but if they have to rely on the ordinary methods of diagnosis, then their treatment will not have much of a show. Again, if the bleeding is into the peritoneum, of course no needle, electrical or otherwise, will stop that. And if the bleeding is into the broad ligament, there is, as I have shown, no need for it. After the seventh month the killing of the fœtus does not relieve your patient from the risks of an operation; *toute au contraire*, the risks of suppuration, which is sure to follow, are enormous. If, on the other hand, you wait until full time, you can remove a living child.

Now, then, we come to the most important part. When your patient is dying from the effects of a ruptured tubal pregnancy, what are you to do? The course to pursue was indicated a hundred years ago, and with the utmost precision, and is now embodied in an aphorism of surgery, viz.: In case of hemorrhage, get at the bleeding point and apply a ligature. The same rule applies here. We know now that the source of the hemorrhage is in one of the vessels of the broad ligament. You open the abdomen, and find it full of blood and clots. Do not at first trouble about the blood, but go straight for the broad ligament. Go to where a swelling is felt, and if it is not on one broad ligament it will be on the other. Then pull it up, put on a ligature, and your patient is saved. In order to sum up what I have to say, let me read the account of the last case in which I operated, only a few days ago.

"On the morning of August 7th, at 1 P.M., Dr. Nelson, of Birmingham, called upon me in reference to a married woman, aged twenty-six, whom he had seen that very morning. She complained of a sudden attack of violent pain in the lower part of the abdomen. She rapidly got worse, and when seen by him was already in a condition of collapse. She was acutely anæmic, and presented all the classic symptoms of abdominal hemorrhage. The one point in the history that gave a clew to the case was that she had gone six weeks over her time without menstruating. He made the diagnosis of ruptured tubal pregnancy, and I had but little hesitation in agreeing with him. The patient was brought to the hospital as speedily as possible, and was found to be absolutely pulseless. I opened the abdomen, and, as one of the spectators afterward said to me, the flow of blood was as if I had opened a hydrant. Disregarding the blood and clots for the time being, I went straight for the fundus of the uterus, and in a moment discovered that a tubal pregnancy existed, and had ruptured in the right Fallopian tube. I promptly ligatured it, and then proceeded to remove the blood and clots. I then closed the abdomen, leaving in a drainage-tube. Not another drop of blood was lost, and the further progress of the case is as follows: At 5 P.M. on the same day her temperature was 36° C. (96.8° F.), and no pulse could be felt except deep down in the neck. The pupils were widely dilated, and the only sign of life was some slight movement of the diaphragm. The complexion was waxy and yellow. At 11 P.M., the temperature had risen to 38° C. (100° F.), but still no pulse was perceptible at the wrist; it was only thirty-six hours after the operation that it was possible to count the pulse. In Dr. Thomas's case the pregnancy ruptured outside the peritoneum; in this case it was inside. The trouble in both cases was the same, but in one case the hemorrhage was limited by the hæmostatic influence of the broad ligament, while in my case there were none of nature's efforts to arrest the hemorrhage, and in another hour it must have been fatal. The case was seen and the operation performed in the presence of Dr. Nelson, my assistant Dr. Derchelmann, Dr. Ostrom, of New York; Dr. Arthur Johnstone, of Danville, Ky.; and Dr. O'Callagnan, of the city of Cartow. It constitutes my forty-seventh case of the kind I have operated upon. Dr. Derchelmann made a careful examination of the preparation, and the rent in the tube is not more than a quarter of an inch long, the fœtus not being more than the fourth week. It lies in the membranes in the tube."

Why, then, should we let these women die? Surely, it is some advance if we can remove from the list of catastrophes of our art at least one such, and this we claim to have done.

ORIGINAL ARTICLES.

REST AND EXERCISE IN HEART DISEASE.[1]

BY ALFRED L. LOOMIS, M.D., LL.D.

RECENTLY physical exercise in the treatment of diseases of the heart has been much discussed, and the statement has been made by distinguished observers that it is a most valuable therapeutic agent in their successful management. Such a statement, however, is misleading and dangerous, unless accompanied by a definite description and classification of those pathological changes in the heart which allow of exercise, and those in which rest is essential to the prolongation of life. I venture to offer a few clinical experiences on this important subject, and to formulate, as far as possible, the rules which now govern me in advising rest or exercise to those suffering with heart affections. Clinical experience makes it evident that while one case of heart disease is benefited by rest, another is benefited by exercise, and the question is constantly coming to us in our management of cardiac cases, What pathological changes in the heart render exercise dangerous and what demand rest?

If we turn to the older writers on heart disease for an answer to this question, it will be found that the plan advised in the treatment of all valvular lesions was to diminish as much as possible the work of the heart, and in most instances absolute rest was insisted upon.

Until quite recently valvular murmurs were the important clinical phenomena in cardiac disease, and decided its diagnosis, prognosis, and treatment. But as our knowledge of cardiac pathology has advanced, murmurs have assumed a secondary place. Within the last few years we have gone a step further, and to-day no intelligent observer regards a cardiac murmur as anything more than a sound indicating the seat and character of a valvular lesion. The great problem to be solved in every case is, What is the condition of the heart-muscle and the heart-cavities? We know that so long as full nutrition is maintained in the cardiac walls the heart meets every obstacle to its activity with added force, and only when the walls are weakened do we find the clinical evidences of cardiac insufficiency. To maintain the integrity of the heart-walls and cavities the muscular tissue of the heart must be healthy. The heart-muscle must receive a sufficient supply of healthy arterial blood. The products of muscular waste must be rapidly removed from the body, and the trophic nerve apparatus of the heart must be in a normal state.

Any essential deviation from these normal conditions leads to weakening of the heart-walls, and favors dilatation of its cavities. It is evident that when the physical organism, as well as the heart itself, is healthy, abnormal increased stimulation of the cardiac muscle from any cause results in the production of hypertrophy, while, on the other hand, if the vitality of the organism is below par, and the heart-muscle imperfectly nourished or diseased, it does not respond to the increased stimulation, and instead of becoming hypertrophied, the walls of the heart yield to the intra-ventricular blood pressure, and dilatation of the cardiac cavities is the result. Whenever there is dilatation of the heart-cavities, with weakened heart-walls from any cause, physical exercise is contra-indicated whether valvular lesions exist or not.

It seems hardly necessary to insist upon the importance of absolute rest in the treatment of all acute inflammations of the heart and its appendages, for no one, I think, will claim for a moment that it is safe for a patient with an acute pericarditis, endocarditis, or myocarditis to take even moderate exercise. It is a well-recognized therapeutic principle that for the successful management of any one of these acute affections, patients must be kept at rest in bed, freed from all those influences which tend to accelerate the heart's action or increase its force; in fact, the remedial agents on which we rely most in such cases are those which tend to quiet the heart's action and lessen the force and rapidity of the circulation.

The question, therefore, which naturally meets us first in this discussion is, In which chronic valvular lesion (while the heart is still competent, there being as yet no signs of heart insufficiency) shall we advise or permit physical exercise, and in which shall we enjoin rest?

I maintain that no chronic valvular lesion is to be regarded as absolutely contraindicating physical exercise, unless it is associated either with hypertrophy or dilatation of the heart-cavity which it obstructs. The fact that an obstructive or regurgitant murmur is heard at the mitral or aortic orifice is not conclusive evidence that an individual may not without risk engage in the most violent physical exercise; but when a valvular insufficiency at either of these orifices is associated with extensive hypertrophy and dilatation of the left auricle or ventricle, then the question of exercise or rest is to be determined, not so much by the heart condition, as by the age, habits, and general nutrition of the individual. A stenosis or valvular insufficiency after fifty years of age is a very different affair from the same condition at twenty or thirty. Chronic alcoholism and the evidences of general fibrosis render a heart crippled by valvular lesions far less able to resist the strain of physical exercise, than if the same valvular insufficiency exist in one who is free from these general degenerative changes. The

[1] Read before the American Climatological Association, June, 1889.

two following histories will serve to emphasize these statements:

CASE I.—A gentleman, forty-three years of age, with no rheumatic or gouty tendencies, consulted me in June, 1887, for an opinion if it would be safe for him to join a hunting and fishing excursion to the northern part of Minnesota during the summer. He had been told that he had heart disease, the result of a single attack of acute rheumatism when he was eighteen years of age.

On examining him I found the evidences of extensive mitral insufficiency, with well-marked hypertrophy and dilatation of the left ventricle; his cardiac rhythm was perfect, and he gave no cardiac symptoms. He had led a moderately active life, his habits having been most abstemious, using neither alcohol nor tobacco. I tested him in every possible way, but could not detect the slightest indication of heart insufficiency, and gave him the opinion that it would be perfectly safe for him to take the proposed trip, requesting him to call upon me on his return. During the following November he visited me again, much improved in general physique, and, as he said, stronger than he had been for years. He stated that for three months he had camped out, taking a great amount of physical exercise in rowing and tramping. I could find no change in his heart, except that the apex beat was more forcible than at any previous examination.

CASE II.—In May, 1888, a gentleman, forty-six years of age, of very intemperate habits, who had had a severe attack of acute rheumatism at twenty, consulted me for dyspeptic symptoms and pain in the epigastrium. I found on examination the evidences of mitral regurgitation, with well-developed hypertrophy and dilatation of the left ventricle and auricle; he gave no cardiac symptoms, and was not aware that he had a cardiac lesion. I advised him to stop the use of alcohol and tobacco, and to live an out-of-door life in the country during the coming summer.

The following December I saw him again with his attending physician, and found him in a condition of general dropsy, with all the signs of advanced cardiac insufficiency. He reported that when he went into the country the preceding June, he stopped the use of alcohol and tobacco, and immediately began a very active out-of-door life, rowing some days five or six miles without resting; for a time he seemed to improve, but early in September, after rowing a race of two miles, he became short of breath, and had a violent paroxysm of dyspnœa which lasted several hours. After this attack, he found that a short row would bring on a paroxysm of dyspnœa; soon his feet began to swell, and he steadily grew worse, until now he was compelled to assume a sitting posture night and day, and was constantly in a condition of great distress.

The important difference to be noticed in these two cases is in their habits of life. At the time of my first examination, physical signs gave little or no appreciable difference in their cardiac lesions. Both had well-marked mitral regurgitation, with the usual accompanying hypertrophy and dilatation of the left ventricle and auricle; but the abstemious habits of the first gave assurance that the cardiac muscle still retained its normal integrity, while the alcoholic history of the second left little doubt that the cardiac muscle was not in a condition to respond to prolonged or severe intra-ventricular tension, and that under such tension sudden and extensive dilatation of the ventricles occurred, which was never recovered from.

I erred in not appreciating this condition more fully at my first examination, and not guarding my patient against the violent and prolonged physical strain which initiated his heart insufficiency.

The object to be aimed at in the treatment of every case of mitral stenosis is to favor the process of self-adjustment in the heart, by the avoidance of excessive intra-auricular blood-pressure. While gentle and healthful exercise may be of service in relieving hepatic and portal congestion, sudden or prolonged physical exertion sufficient to cause muscular and circulatory exhaustion tends to increase intra-auricular tension, and may lead to extreme dilatation of the auricle and permanent crippling of the cardiac circulation.

The following experience impressed upon me the importance of being very careful about excessive physical exertion in these cases:

CASE III.—A few years since a girl, eighteen years of age, was brought to my office by her brother to obtain a permit of admission to the hospital. As she entered my office I noticed that she was very much out of breath. On examination I found the evidences of advanced mitral stenosis. I gave the brother a permit to the hospital on condition that he would take the patient there in a carriage, as there was a strong wind blowing from the east, and she would be compelled to walk a mile against the wind. He promised, but after leaving my office forced his sister to walk. She fell by his side as they entered the hospital gate, and died in a few moments. The autopsy showed an enormously distended left auricle, intense pulmonary hyperæmia with œdema, and a mitral stenosis that would not admit the end of the little finger.

The treatment of mitral insufficiency is directed mainly to the prevention of weakening of the ventricular walls and consecutive dilatation of the ventricular cavities. Muscular exertion, especially such as increases intra-ventricular tension and causes temporary interference with respiration, favors the development of both these dangers. A safe rule is to avoid everything which throws extra strain upon the heart, especially if the evidences of commencing dilatation exist. The amount of exercise which may safely be taken is determined by the special circumstances of each case; in most instances there

is little difficulty in deciding this point, for any exertion on the part of the heart which makes itself immediately felt by shortness of breath, with slight irregularity in the force of the radial pulse, cannot be safely indulged in. Whenever, from any cause, there is with a mitral insufficiency a defective, irregular, or in any respect an uncomfortable action of the heart, rest must be insisted upon until the heart regains its rhythmical power; as soon as its rhythmical power is regained, gentle exercise is useful in improving not only the general condition of the patient, but also the contractile power of the heart itself, for muscular movements act as a gentle stimulant to many of the secretions, and thus improve cardiac nutrition. We must, therefore, recognize in mitral insufficiency with an imperfectly compensating heart, that there is a period for rest and a period for exercise; a period when exercise acts favorably by improving general nutrition, relieving the system of excrementitious products, and furnishing a more abundant supply of oxygen, as well as a period in which it acts unfavorably by calling upon an already overworked heart for still greater power, bringing it nearer the point where forced expenditure overbalances nutritive repair.

The treatment of aortic stenosis and regurgitation has for its object the postponement of tissue degeneration of the heart and arteries by maintaining all the tissues, especially the cardiac muscle, in the highest state of health. Before the period of ventricular incompetency is reached more exercise can safely be indulged in than in mitral disease; in fact, patients with aortic valvular disease should lead active out-of-door lives, and any exercise may be indulged in which does not involve strain or overtaxing the heart; but if the valvular lesions are associated with atheroma of the vessels the individual should lead a quiet life. The indications for rest or exercise in this class of cases are determined by the character of the murmur, the integrity of the heart-muscle, the extent of the ventricular dilatation, and the condition of the arterial walls. A long murmur indicates far less aortic incompetency than a short gushing one, and, as a rule, will admit of much greater physical strain without damage to the heart. Commencing failure of the heart-muscle and non-compensating dilatation of the ventricular cavity, will not, as in mitral disease, be indicated by shortness of breath, but by headache, vertigo, or actual fainting, throbbing of the peripheral vessels, cardiac palpitations, and carotid pulsations. The condition of the arterial walls will be determined by the age, habits, and hereditary tendencies of the patient, and by the appreciable changes in the surface vessels. In any case, therefore, of aortic valvular disease, if the murmur is short and gushing, the cardiac rhythm easily disturbed, the left ventricular area much increased, the cardiac impulse diffused, and the age of the patient, his habits, and his hereditary tendencies, such as to render it probable that extensive arterial degeneration exists, active physical exercise becomes dangerous, and the effects of even moderate exercise must be closely watched.

The important things to be accomplished in the treatment of either primary or secondary cardiac hypertrophy are to diminish, as much as possible, heart strain, to avoid accelerating the circulation of the heart-muscle, so as to enable the heart to compensate perfectly for the defects it has to overcome without exhausting its contractile power. We cannot, and we would not if we could, prevent the compensating hypertrophy which follows obstructions to the normal blood current, which may have their seat either in the heart or bloodvessels; but we may, by forbidding excessive muscular exertion, or other provocatives of increased cardiac action, prevent such hypertrophy from becoming excessive and consequently injurious.

A mode of life must be adopted which will prevent continuous or repeated excitement of the heart, and which, at the same time, will tend to promote the renovation of tissue and maintain the general state of nutrition as well as the vitality of the cardiac muscle, so as to enable it to meet the extra demand which is required of it in compensating for the lesion which has led to its development, and thus delay as long as possible the degenerative changes in muscular fibre which are certain to occur in excessively hypertrophied heart-walls. To this end moderately active exercise may be taken in the open air, but within the limits of slightly quickening the circulation, great care being exercised that occasional or sudden strain shall not be put on the heart by injudicious exercise or violent muscular effort; active prolonged physical exertion with the idea that it will reduce the volume of an enlarged heart, is calculated to exhaust muscular power, and leads to degeneration of muscular fibre. If a feeling of cardiac oppression, difficult breathing, headache, and vertigo exist, even moderate exercise will be found harmful.

The indications for treatment in cardiac dilatation from any cause are to diminish intraventricular and arterial blood pressure, and relieve venous engorgement: the heart, as far as possible, must be placed at rest, for it is well established that physical exertion increases both cardiac and arterial tension. There is no condition in which cardiac dilatation occurs that active physical exercise is safe, except when the dilatation is secondary to valvular lesions, the integrity of the muscular tissue of the hypertrophied walls being fully maintained, so that the heart fully compensates for both the valvular lesions and the dilatation. The question of exercise or rest in any form of degeneration of the heart-walls is to be determined by the extent and nature of the degen-

eration, as well as by the constitutional conditions under which it occurs. My experience leads me to the opinion that extensive fibroid change in the cardiac walls, occurring, as it usually does, in those of an hereditary or acquired fibroid diathesis, admits of less intracardiac tension than extensive fatty degeneration of the muscular fibre. Sudden death may occur in such cases as the direct result of sudden and violent exertion. In some instances an extreme dilatation of the ventricular cavities takes place at the time of the physical strain, which is never recovered from, and marks the beginning of a heart insufficiency which terminates life after a few weeks or months of cardiac distress.

The following history emphasizes this statement:

CASE IV.—In November, 1888, a gentleman, fifty six years of age, with a gouty history, consulted me for slight attacks of dyspnœa, which followed exertion, stating that within a few weeks he had become so short of breath going up the stairs to the elevated railroad, that he was compelled to rest once or twice during the ascent. I found on examination the normal area of precordial dulness much increased, the apex impulse diffused and feeble, the cardiac rhythm irregular in force, and the heart sounds indistinct, but no murmur could be detected. From his history and general condition taken in connection with his heart symptoms, I was quite certain that extensive fibroid changes in the heart-walls existed, and I cautioned him against making violent or prolonged physical exertion.

On the 15th of the following month the elevator in the building where he had his offices having temporarily stopped for repairs, he attempted to walk up four long flights of stairs; when about halfway up the last flight his breathing became so difficult that he sank on the stairs and called for help. He was carried into his office, and after resting a few hours, took a carriage for his house in Fifty-first Street. A few moments after he reached it he died.

The autopsy showed an extremely dilated heart distended with blood, with somewhat thickened ventricular walls, which everywhere showed extensive fibroid changes. At the apex of the left ventricle the muscular tissue had entirely disappeared, and its place was occupied by firmly organized fibrous tissue; there were also evidences of both visceral and parietal interstitial pericarditis. It was evident that the fibroid changes in the heart walls were so extensive in this case that they had not sufficient contractile power to overcome severe intracardiac tension.

In the early stage of fatty degeneration of the heart walls, a moderate degree of vigor may be maintained for a long time, if patients are restricted to an animal diet, and adopt a life of daily systematic out of-door exercise, provided the exercise is never carried to fatigue or to such a degree as to cause dyspnœa. Often such patients after a time will be able to undergo an amount of physical exertion with advantage, which they could not at first safely have attempted, on account of the dyspnœa and anginal pain which it produced. Muscular exercise under these circumstances is far more likely to be of service in the young than in those past middle life. I have frequently found that in young subjects the signs of heart insufficiency would entirely disappear during a carefully regulated course of gymnastic or pedestrian exercise. But in those advanced in life, atheromatous disease of the aorta and secondary affections of the lungs and liver render even slight physical strain dangerous. If a fatty heart has once become dilated, as is indicated by recurring attacks of anginal pain, syncopal seizures, and paroxysmal dyspnœa, general enfeeblement takes place rapidly, and the most gentle exercise becomes dangerous.

The only heart affections which I have found uniformly benefited by vigorous physical exercise, are fatty infiltration, or, as it is sometimes called, fatty overgrowth of the heart, and weak hearts in anæmic and neurotic subjects.

The treatment of fatty infiltration of the heart differs in no respect from the treatment of general obesity; if the fat can be removed from the muscle of the heart, the organ will regain its normal contractile and resisting power. If the subject is young, the pulse regular, the heart free from valvular lesions, and its cavities not dilated, the aorta healthy, and the kidneys free from disease, the most active exercise may be undertaken without danger and usually with benefit. It is claimed that Oertel's plan of treatment is applicable to all cases of heart disease where there is a disturbance of the hydrostatic balance, but usually there is no disturbance of the hydrostatic balance in heart disease until after failure of compensation, except in those cases where there is general obesity with fatty infiltration of the heart.

The principal and primary pathological factor in obesity is faulty oxidation, and as the heart becomes implicated the power of oxidation is still further lessened. The object of treatment in these cases is therefore to get rid of the fat by increasing oxidation, and thus improving the nutrition of the heart muscle.

There is no question that the most effective means of accomplishing this is by active physical exercise in the open air, such as is obtained by mountain-climbing.

This is no new proposition, for Dr. Stokes, in his work on *Diseases of the Heart* (page 373), states that pedestrian exercise in mountainous countries such as Switzerland and the Highlands of Scotland, will enable patients with fatty hearts to undergo active and prolonged exercise without signs of heart failure, and that the effect of pedestrian exercise is

twofold: it not only increases muscular energy and development, but by augmenting the secretions of the skin it assists in conveying off a large quantity of the oily constituents of the system; "and," he adds, "I have seen most remarkable examples of this in young persons who have spent summers walking through the Alps, when during exercise they were under constant perspiration."

No one, I think, will doubt that a life of activity, which favors the oxidation of waste products and accelerates their removal from the body, tends to lessen the work of the heart; but if the heart-muscle is not in a condition to respond to the exercise, dilatation of the right heart must occur, and as its muscle becomes more and more exhausted, systemic capillary obstruction and increased arterial tension follow. When under such circumstances the imperfectly nourished left ventricle is unable longer to meet the demand that is now made upon it, it becomes dilated. Therefore even in a heart that is the seat of fatty infiltration, exercise must be carefully graduated, so that it shall at no time exceed the nutritive supply to the heart muscle. In every case where the heart muscle is not in a condition to respond fully to graduated exercise, the heart work must be reduced to its minimum, until by rest, forced nutrition and alimentation, its contractile power shall be regained. Certainly no case of fatty infiltration should be subjected to Oertel's plan of treatment unless there is unmistakable evidence that the cardiac muscular fibre is healthy. The weak hearts which are so often met in anæmic and neurotic subjects, I have usually found benefited and in many instances cured by judicious exercise and a carefully regulated diet, but the danger of cardiac exhaustion in these cases is very great and must constantly be borne in mind. My studies of the effects of violent physical exercise on the heart convince me that the morbid changes which lead to irreparable cardiac incompetency in a large number of cases commence in the left ventricle, and that their order of development is as follows: It is well established that during violent and prolonged physical exercise the cavity of the left ventricle becomes dilated and its walls hypertrophied to meet the greater demands of the general system for an increased blood-supply; this increase in the ventricular capacity and power gives rise to high arterial tension and increased aortic recoil; as a result degenerative changes are initiated in the walls of the aorta which diminish their elasticity and contractile power; as a consequence the force of the coronary circulation is diminished, and the nutrition of the heart walls interfered with. Excessive dilatation of the left ventricle is now liable to occur during any severe intra-cardiac tension, and the resulting overloading of the pulmonary circulation leads to right ventricular dilatation and finally to insufficiency at the tricuspid orifice. The general venous systemic engorgement which follows marks the advanced stage of cardiac incompetency. Therefore if we advise one who has passed middle life or who has an acquired or hereditary fibrous diathesis to enter upon mountain-climbing, or any other prolonged physical labor, we find when too late that our advice has been followed by irreparable dilatation of the right ventricle.

I would urge that before advising exercise to patients with cardiac affections, or even to those who have entered upon the degenerative period of life, who furnish none of the usual signs of cardiac disease, we carefully investigate their cardiac resisting power as well as the condition of their general arterial system.

TWO CASES OF LITTRE HERNIA.

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LITTRE hernia, or a hernia involving only a part of the circumference of the intestine, is of unusual occurrence and of great interest from a surgical point of view. In such cases, intestinal obstruction may exist though the constricting ring does not completely occlude the lumen of the gut. The cause of this obstruction is due either to a kink or sharp flexion, or to paralysis of peristaltic motion induced by the strangulation.

The diagnosis is obscure, for no tumor may be present, and no local tenderness or localized pain; all the pain being referred to the umbilicus, as in many other forms of intestinal obstruction.

In such cases of concealed hernia, where all symptoms of intestinal obstruction are present without any indication that the trouble is due to strangulation through a hernial opening, operation should be performed by median abdominal incision as in intestinal obstruction from an intra-abdominal cause. In Littre hernia median abdominal section not only serves for exploration, but often may be sufficient for treatment, as reduction can be accomplished by traction on the intestine from within the abdomen without division of the hernial ring.

CASE I.—A female, forty-eight years old; general appearance cachectic, and that of a woman of seventy; admitted to the medical wards of the Pennsylvania Hospital under the charge of Dr. A. V. Meigs. She had suffered with abdominal pain for one week and with persistent emesis for thirty-six hours before admission. The attack was not acute in character, and she had on previous occasions suffered with similar symptoms. Emesis became feculent on September 16th; abdominal pain continued, and constipation was absolute. Dr. Meigs decided upon operation, and she was examined by the writer on September 17. She was then in a sinking condition; there was a moderate amount of abdominal distention, and the move-

ments of the coils of intestine were plainly visible through the abdominal parietes. There was general tenderness over the abdomen—most marked in the right iliac region. She had a previous history of right inguinal hernia, but there was no tumor present, and no tenderness in the region of the inguinal canal. Laparotomy was performed by median abdominal incision. A small quantity of sanguinolent serum was found in the peritoneum, and the presenting loops of ilium were distended and congested. The most distended loop was traced to the right iliac region, where there was a mass of adherent intestine; one loop about eight inches in length was bound by adhesions in a position of sharp flexion. The adhesions were separated with the fingers and the right internal inguinal ring was examined. A loop of intestine was found firmly attached to the ring by a diverticulum which entered the inguinal canal and was bound there by such old, organized adhesions that its removal by means of the abdominal incision was impossible. There was, however, no strangulation of the diverticulum and no occlusion of the intestine from which it sprang. No other pathological condition was found in the abdomen, the obstruction being caused by the adherent loops of intestine in the right iliac region. There was no shock after operation and she passed a comfortable night. Six days later she had obstinate diarrhœa.

She died from exhaustion, due to a combination of intercurrent diseases, thirty days after the relief of the obstruction.

At the autopsy a conical diverticulum was found situated on the ilium at a distance, from the mesenteric attachment of one-fourth the circumference of the intestine, and eighteen inches from the ileocæcal valve. It was one inch long and one-half inch in diameter at the base. In structure it was composed of all the intestinal coats. It was so firmly adherent to the inguinal canal that it could not be torn out. It occasioned no obstruction.

There were also present general atheroma, disease of liver, lungs, kidneys, and vertebræ, and cancerous ulceration of the cæcum.

CASE II.—A woman, sixty-four years old, was seized with sudden pain in the right inguinal region after heavy lifting, on July 26, 1889. This was followedby prostration, repeated vomiting, and intense umbilical pain. She was admitted to the surgical wards of the Pennsylvania Hospital twenty-four hours after the beginning of the attack. Her condition was then good. The temperature was normal, the pulse 90. There was no abdominal tenderness and but slight distention. The vomiting had ceased, and the tongue was clean. There was a cystic tumor, the size of a pigeon egg, over the right external inguinal ring, which had been there for many years. There was no tenderness on pressure, and no pain in the region of the inguinal canal. All her present pain was referred to the umbilicus. Before admission to the hospital unsuccessful attempts at taxis had been made on the cystic swelling in the right groin. When admitted, the tumor, except from its position, presented none of the signs of hernia. It was painless on pressure, and freely movable under the skin, and of the same size which it had had for many years.

A large rectal injection of turpentine and water was administered, and was followed by a very small fecal movement.

Early the next morning the abdominal pain and distention increased, and the vomiting began again and became fecal. As there was undoubted obstruction and no symptom to indicate the position of the lesion, a median abdominal section was made at 9 A.M. for the purpose of exploration. A loop of ilium was found caught in the right internal inguinal ring. The whole lumen of the gut was not involved, but a portion on the convex surface, about one inch in circumference, had slipped through the ring and was firmly constricted, requiring considerable traction for its removal. It was not necessary to divide the ring. The strangulated portion was brought to the abdominal opening and examined. It presented the appearance of a livid circle of one inch diameter on the convex surface of the ilium. It was restored to the abdomen and the incision closed. The cystic tumor in the groin was unaltered by the operation. Recovery was uninterrupted.

It is probable that the hernia in the case first described began in the same way as in Case II., without, however, producing strangulation and acute obstruction, and the false diverticulum was caused by constant, long-continued traction on the adherent portion of the circumference of the intestine.

DIPHTHERIA AT HIGH ALTITUDES.

BY S. S. TURNER, M.D.,
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ASIDE from its professional interest, it is seldom that one finds anything so entertaining in a medical journal as Dr. S. H. Chapman's "Notes on the Prevalence of Diphtheria at High Altitudes," published in THE NEWS of September 28th. The Austrian surgeon's brief summary of the epidemic in Tyrol, as of "atmospheric" origin, "non-contagious, and uninfluenced by treatment of any sort," is somewhat startling; but his statistics—"sixty cases and forty deaths"—correspond so nearly with my own observation of the disease in the high and dry northwest, that a great load is thereby lifted from my mind.

Approximately we may say that Dakota extends from the 43d to the 49th degree north and from the 97th to the 103d west, and that its elevation varies from 1000 to 3000 feet above the sea. Within this territory many cases of diphtheria, treated by many physicians, have come to my knowledge, and to place the mortality at 60 per cent. is to do no injustice to any practitioner of my acquaintance, whether we admit or not that the disease is "uninfluenced by treatment of any sort."

In the southwestern part of the Territory, ten or

twelve years ago, I saw two fatal cases, in consultation with other practitioners. Within a radius of twelve miles I also attended five cases personally, of which three died—seven cases, five deaths. I mention only the cases seen personally, but they do not differ from the general results.

I next encountered the disease about six years ago at Fort Buford, which is nearly upon the 48th degree north, with an elevation of 2000 feet or more. Like all "well-regulated" military posts, its slops are removed daily, its grounds "policed" weekly, the whole being inspected monthly by the commanding officer and his staff, and as much oftener by the chief medical officer as he may deem advisable. Whether due to this fact or not, there is very little disease of a serious character at this or any other of the posts in Dakota or Montana. Once in a while, however, we encounter a typical case of typhoid, such as in England comes only from dunghills and dairies, or in Philadelphia from defective plumbing, or more often a typical pneumonia, neither of which diseases gives rise, in my experience, to other cases, though treated in the same wards with tonsillitis, lumbago, and gonorrhœa.

At the time I speak of, Fort Buford was 160 miles from any considerable village and 80 miles from the nearest railroad station. It was midwinter, with a foot or two of snow, and a temperature ranging from about zero to 40° below. In some winters the temperature is rarely above zero between December 1st and March 1st, and never above freezing point, while in other years there may be an occasional thaw within this period.

A few hundred yards north of the main garrison, on the open prairie, is a structure containing four sets of "laundress quarters," each consisting of two rooms and an enclosed shed, the latter being used for water barrels in the winter and for laundry work, while the kitchen, and often the sleeping-room, is used for drying purposes. Yet these families are healthy as a rule. Beginning at the east end of the row facing south, one of two children in the family was attacked with what appeared to be a catarrhal tonsillitis, but on the second or third day I discovered that I had to deal with diphtheria, and that the second child was coming down.

In the adjoining quarters were five children who had been playing in the infected quarters, apparently with as much freedom as at home; and, in fact, the partitions were of such an open and flimsy character that ordinary conversation could be heard from one room to the other. However, I quarantined the five children upon their own side of the partition, and made a thorough inspection of the entire premises. Inside and out everything was clean. Suds had been carried away and poured upon the snow. The floor of the shed was damp, but clean. To all appearances the quarters were as good as any in the garrison, and all were as they had been for ten years. I had not heard of the disease being at any time nearer to Fort Buford than Bismarck—250 miles east. On the opposite side of the garrison were a larger number of laundress quarters, to all appearances in a similar condition, but no disease appeared there, although the women, as is usual, showed their sympathy by frequent visits.

In a few days both children were dead. About a week after their burial I was called to see the oldest of the five in the other family. It was said that he had been ailing for some days—had appeared weak and pale, but had continued to play about the house. That morning, however, he had fallen down from sheer weakness while going to his breakfast. I examined his throat and found both tonsils diphtheritic, but apparently in a state of beginning resolution. I prescribed iron and chlorate of potash, without local treatment, and directed that the boy be kept in for a few days longer. He continued to improve, and recovered without confinement to bed, but later nearly starved from paralysis of the muscles of deglutition. The four younger children escaped the disease, as well as all of those in sets three and four.

Two months later a band recruit arrived with wife and three children from West St. Paul, where virulent diphtheria was prevailing. They occupied an isolated cabin, distant from the scene of the late outbreak nearly half a mile. A few days after their arrival one of the children was prostrated by the disease and died. The rest of the family escaped. Two months later a lad arrived from the far south to visit an aunt near the cabin of the band man. A few days after arrival the boy was stricken in the morning and died before sundown. Five cases; four deaths. I do not think the last two cases bore any relation to each other, or to the former three.

Some five years later—last winter—Fort Buford was revisited by the scourge, but, happily, I was not there to see it. Nearly the entire garrison had been changed in the meantime. The disease did not appear amongst the laundresses' children, but in the family of a non-commissioned staff officer, who lost his wife and three out of four children. One of two children in the nearest neighboring family was attacked and died. In a distant part of the garrison two of three children in the family of an officer were attacked and died. Two children of another officer were attacked, but recovered, the youngest suffering alarmingly from paralysis of the throat. Eight cases with six deaths. Total, twenty cases, with fifteen deaths, or a mortality of 75 per cent.

These cases "militate" strongly against the "atmospheric" theory of the Austro-Tyrolean, and, further, they prove that in a northern atmosphere

of great rarity and purity, with only moderate elevation, diphtheria is the most fatal of prevailing maladies.

While all the cases observed by me appeared to be of strictly local origin, I do not wish to account for the appearance of the microbes in any case, or for their sudden disappearance in the presence of so many exposed children; for future students may wish to prove that all microbes are pathological *results*, which may reproduce disease when transferred to a healthy body.

CAMP SHERIDAN, WYOMING TERRITORY, Oct. 16, 1889.

HOSPITAL NOTES.

STRANGULATED INGUINAL HERNIA.

Abstract of a Clinical Lecture
Delivered at the Buffalo General Hospital, October 10, 1889.

BY ROSWELL PARK, M.D.

DR. PARK showed a man aged forty years suffering from an inguinal hernia which three and a half hours previously had become strangulated. Taxis having failed, he was brought to the hospital for operation. The hernial tumor was the size of a child's head, irregular in shape and distending the scrotum. It had also dissected between the superficial tissues of the lower part of the abdomen, which was considerably swollen in consequence. Previously to operating the surface was scrubbed, shaved, and washed with a mixture of turpentine and alcohol, which on account of its penetration Dr. Park prefers to other antiseptics for the skin. On opening the sac in the usual manner, about four ounces of blood-stained serum escaped. The walls of the sac were much thickened, and in some places adherent to the intestines, of which about twenty inches were found in the cavity. Several of the adhesions were torn, but no oozing followed and sutures were not necessary. The internal ring was nicked and the bowel readily replaced. A portion of the sac was continuous with the meso-cæcum, but the remainder was removed. A counter-opening was made for drainage, the wound irrigated and the internal ring united with silver wire sutures, catgut sutures being used superficially, and the whole dressed with an antiseptic pad.

NOTE.—Four days later the patient died, and at the autopsy an area of meningitis over the leg centre was found, under which the brain was œdematous.

CLINICAL MEMORANDA.

THERAPEUTICAL.

Clinical Reports on Arsenite of Copper.—There lie before me nearly fifty letters from physicians residing in different sections of the country, who have lately been observing the action of arsenite of copper in the treatment of various bowel affections, including cholera morbus, cholera infantum, diarrhœa, and dysentery. To sift this mass of correspondence and correctly estimate the value of the remedy is a work of no small magnitude, and the space required for such an elaborate study would tax the ournal that should undertake to publish it so sev erely, that I have decided to give an abstract of the communications, together with some illustrative cases, in the hope that further investigation will result as satisfactorily as has that which I have undertaken.

As a preliminary to the reports which follow, I may add a few words concerning the indications for the use of this comparatively new remedy, and some instructions regarding its administration. In addition to the above-mentioned diseases, Dr. Broughton, of Reidsville, N. C., has found it of great value in the treatment of chlorosis and allied affections, the dose in such cases being 1-25 grain three times daily. The best method of administering the drug is in small and frequently repeated doses. Thus, in the treatment of a case of cholera morbus, the dose for the day (1-100 grain) is dissolved in from four to six ounces of water, and a teaspoonful of this given every ten minutes for the first hour, and afterward at intervals of one hour, or, should the circumstances warrant, every half hour. To meet those cases where the use of water is contraindicated, I have had prepared for use tablets containing grain 1-100 and grain 1-5000, which enable the physician to graduate the dose, and repeat it at as frequent intervals as may be deemed necessary.

I had some hesitancy in offering to the medical profession a drug which was to be used in such small doses, and asked the manufacturers if it were possible to detect so small a quantity of the remedy as one part in five thousand, to which they replied that it was quite possible to detect *one part in ten thousand*, of either the arsenic or the copper. My later observations have been very favorable to the continued use of the drug, though I should add that there seems to be greater benefit derived from its administration in the early stages, before the inflammatory action has extended to adjacent or contiguous structures. When adjacent structures are involved, it is advisable to combine with it some suitable opiate in small doses, and as this method is the one that I have adopted, it will appear that I have not advocated the arsenite of copper as a specific.

In my attempt to present an abstract of the correspondence, some cases, of course, will have to be overlooked, but I wish to represent the true condition of affairs as nearly as possible, and I desire here to return my sincere thanks to the gentlemen who have favored me with an account of their experience.

Dr. J. W. Long, of Russell, Kansas, writes as follows: "At the time the samples were received, I had a very severe case of summer complaint under treatment, of three weeks' duration, in a child six months old. The usual remedies in such cases had been tried in vain; after I began with the arsenite of copper, there was within twenty-four hours a decided improvement, and after the third day the child was well." Dr. Long says that he has also used the drug in the diarrhœa of malarial and typhoid fever, and in other affections of the bowels, with good results.

Dr. W. H. Rees, of Trading Post, Kansas, writes as follows: "I have had occasion to use arsenite of copper in four bad cases. The first case was a child, æt. two and a half years, with a severe attack of cholera infantum. Vomiting was almost continuous, the bowels had moved fifteen to eighteen times in the course of seven hours, the nose and extremities were cold, with the usual pinched appearance of face, and shrunken limbs. I had been in attendance twenty-eight hours when the arsenite

of copper arrived, and had freely used the usual remedies, but the patient was worse than when first seen. I then began with the arsenite of copper and withdrew everything else, except small quantities of water. The child vomited but once after the first dose, and the bowels moved but three times in the following twelve hours. Improvement was steady and permanent, and I made but two subsequent visits. To-day the child is as rugged as you could wish to see."

Dr. R. D. Boggs, of Marquez, Texas, says: "In cholera morbus, the effects of arsenite of copper have been prompt, ameliorating the symptoms and perfecting a cure without other medication, in almost every case. In cases of longer duration, I have generally been unsuccessful with it, and have had to resort to other treatment, although I regard it as a valuable remedy in bowel troubles, if used early."

Dr. J. B. Burroughs, of Shortsville, N. Y., writes that he has been successful in the treatment of four cases out of five, and that the fifth case was much benefited by the treatment.

Dr. R. B. Root, of Georgetown, Mass., says he has used it in six cases, three of which were successful, but that in cholera infantum he dared not continue its use longer than twelve hours.

Dr. P. D. Carpenter, of Pittsford, N. Y., says although he used it in both infants and adults, his experience was not favorable, and that he was forced after a sufficient trial to resort to other remedies.

Dr. John L. Heffron, of Syracuse, N. Y., has also failed to see good results following its use, although he says it is worthy of a more extended trial than he gave it.

The experience of Dr. A. H. Thomas, of Ironwood, Mich., is in marked contrast with that which has just been related. Speaking of its use in cholera morbus, he says: "In every case I have used it, it acted like a specific. I gave a few tablets to Dr. Nivens, of this place, for trial. He was called to a very severe case, and would have used his hypodermatic had he not forgotten it. He prescribed the arsenite instead, with the happiest results."

Dr. H. S. Crockett, of Rural Retreat, Va., reports that he has used the remedy in a number of cases of cholera infantum and in cholera morbus, but that as other remedies were used at the same time, he is unable to say what influence the arsenite of copper had, "except in a case of dysentery, which yielded to this drug after the disease had resisted the ordinary remedies, and also one case of cholera morbus which was relieved without resort to any other remedy."

Dr. F. C. Ard, of Pomeroy, Ohio, has used this drug in two cases only, one being a child of fourteen months with diarrhœa, the other a child of eighteen months with acute dysentery, engrafted upon a chronic diarrhœa. The first case was promptly relieved, but in the second recourse was necessary to other methods of treatment.

Dr. J. W. Chamberlain, of Wyalusing, Pa., has used the drug in various instances, and thinks the results have for the most part been favorable. Some of his patients have not again reported, and these cases are set down as successful, while in others he has seen relief follow within twenty-four hours.

Dr. J. H. Freeman, of Lexington, Va., reports that the results were very satisfactory. "Three cases of enterocolitis were promptly relieved of the diarrhœa and tenesmus, and, as no other medicine was given during the time, I am satisfied that the results were due to the arsenite of copper. Other treatment which had been adopted was discontinued and the arsenite alone used, when the patients recovered in a few days." He says also: "The arsenite was tried in a case of tubercular laryngitis with diarrhœa, with very great relief. I also gave it in a case of pulmonary phthisis, with profuse diarrhœa, and the discharges were reduced from twelve to two per diem."

Dr. A. D. McDonald, of Wilmington, N. C., reports having used the remedy in eight cases of typhoid fever, and that it acted like a charm in six and did moderately well in the other two. He has used it in about forty cases, and is well pleased with it.

Dr. E. L. Harriott, of Jacksonville, Ills., gives an account in detail of four very interesting cases, and closes as follows: "I think in genuine, uncomplicated cases of cholera morbus, especially where there is a tendency to dysenteric discharges after the first onset, of which I have had a number previous to obtaining this remedy, it would be invaluable, as it seems to relieve promptly."

Dr. D. Sinclair, of Tonawanda, N. Y., reports "that he has used arsenite of copper in the treatment of summer diarrhœa of adults and children, in chronic diarrhœa, typhoid fever, irritable stomach, and in anæmia with gastric and bowel trouble with good effect. In the bilious attacks which are so common to children in the hot season, the children tolerated large and often-repeated doses, and especially where the symptoms were severe, the vomiting and other symptoms generally ceased as if by magic, and improvement commenced with the first dose. . . . . In anæmia, with irritable stomach and bowels, the patients were soon able to tolerate more food, the body increased in weight, the lips became rosy, and, when the monthly periods had ceased, they were re-established."

The report of Dr. A. I. Lawbaugh, of Opechee, Mich., so accords with my own observations that I transcribe the following: "My first case was an infant of eleven months, suffering from cholera infantum, bordering on the stage of collapse. After the arsenite was administered, the child vomited but once, the stools became less frequent, and in three hours the child was on the way to recovery. I treated a number of similar cases almost invariably with the same success. When failure occurred it was either because the medicine had not been given according to directions, or else too late.

"My first administration of the drug to an adult was in a case of cholera morbus, where the patient had been under other methods of treatment for twelve hours without benefit. After the first dose he vomited but once, the bowels moved no more, and in twenty-four hours after beginning the treatment he considered himself well. I used it in many similar cases with equally good results."

Dr. C. C. Stockard, of Columbus, Miss., has given the drug a fair trial in various disorders: in cholera morbus it has given prompt relief; in some cases of diarrhœa in children it has been less satisfactory, but in a number of cases which threatened to develop into typhoid fever relief has followed in the course of a few days.

Dr. E. C. Dupont, of Grahamville, Beaufort County, S. C., says his experience has been somewhat limited, but he has used the arsenite in two cases of cholera mor-

bus, and in each instance the medicine acted promptly in checking the vomiting and purging.

Dr. F. F. Field, of Elroy, Wis., has had the misfortune to meet with quite a number of very obstinate cases of dysentery which failed to yield to any of the ordinary remedies, and has not been successful with arsenite of copper. He has used it in but two cases without the aid of other medicines, but was compelled to discontinue its use after a day or so, an observation which should not be overlooked in connection with the suggestion made regarding the use of opiates.

Dr. John Swain, of Ballardsville, Ky., writes for himself and his partner, Dr. Weeks, giving an instructive account in detail of no less than twelve cases, covering diarrhœa, dysentery, cholera morbus, and cholera infantum, in which the arsenite was used with great satisfaction. This communication, I hope, will soon be published, and it will be sufficient to say that both these gentlemen "are thoroughly convinced of the efficiency of the remedy."

Dr. E. C. Linn, of Monmouth, Ills., writes that he has used the tablets in a number of cases of typhoid fever where there was diarrhœa, and in the majority of instances it acted very promptly. In other bowel affections it has not always been successful, although he records one severe case "where it acted like a charm." The patient had been suffering all the morning from cramps and active purgation, and the arsenite was exhibited about 2 P.M., but when he called again about five o'clock, the patient had recovered and gone out.

Dr. W. F. Spragins, of Aberdeen, Miss., reports in detail a series of six cases in which the use of this drug was attended with most excellent results. One case was that of a man æt. thirty-three, who complained of having an annoying, griping pain about the umbilicus. He says: "Here the arsenite of copper acted like a charm, one tablet being all that was required to bring about permanent relief . . . . ."

Dr. John M. Buckingham, of Springfield, Ohio, sends a general report, in which he mentions that he has succeeded admirably with the preparation in the treatment of several cases of typhoid fever. "I purpose adding the remedy to my regular armamentarium, and have every confidence that future use will verify what is claimed for it." The statement of Dr. Buckingham is one that I can fully indorse, especially in the matter of treating typhoid fever, and now that I understand its action so well in this disease, it would seriously embarrass me were I compelled to eliminate this drug from my list.

Dr. L. G. Broughton, of Reidsville, N. C., sends a lengthy report which I shall advise him to publish, as it covers the treatment of the diarrhœa of phthisis, that of dysentery, and also that of chlorosis, already referred to, and is on the whole an excellent testimonial to the great value of the drug in this class of cases. Dr. Broughton is very positive that the good results he has witnessed are due to the influence of the remedy.

Dr. W. E. Shelton, of Appleton City, Mo., writes that he has used it in a number of cases, with very satisfactory results; the cases he reports include five cases of diarrhœa in children, ranging in age from six weeks to three years, and two cases of dysentery. He adds: "I must say that I had but little faith in the remedy in such small doses, but am now satisfied that it will prove to be one of the best remedies in diarrhœa and dysentery."

Dr. J. F. Escher, of San Diego, Cal., says he has used the remedy in ten cases, ranging in age from six months to forty-six years, and in most of the cases the bowels were checked after giving six doses at intervals of ten minutes, and in every case the diarrhœa was checked before one full tablet had been taken. In only two cases was there a disposition for the bowels to become loose again after a day or two, and these were in children fed on fresh, unboiled milk, which the stomach failed completely to digest.

In concluding this somewhat imperfect epitome of my correspondence upon an important topic, I may add that I still have a large number of cases included in reports which have not been mentioned, but space and time forbid, and the foregoing is submitted with the hope that the readers of this journal will properly estimate the value of the testimony in favor of this drug. Should there be any doubt in the minds of some, I can only refer them to the remedy itself, the use of which will furnish the best evidence of its great advantage over the methods of treatment usually practised.

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MEDICAL PROGRESS.

Gonorrhœal Ophthalmia.—In gonorrhœal ophthalmia M. HIGGENS first washes the conjunctiva with a 5 per cent. solution of boric acid, then uses the following ointment spread upon linen and placed over the eye:

℞.—Hydrarg. ox. flav. . .	gr. jss.
Cocaine.	grs. vijss.
Acid. boric.	grs. xvij.
Vaseline	℥j.—M.

—*Monatshefte für praktische Dermatologie*, Oct. 1, 1889.

Excision of Rectal Cancer.—At a discussion in the Surgical Section, British Medical Association, on the treatment of rectal cancer, MR. W. HARRISON CRIPPS formulated his views on excision as follows: Probably not more than 15 or 20 per cent. of cases are in any way benefited by the operation, and such cases are difficult to select from among those in which excision is not indicated. The operation should not be undertaken unless the patient's constitutional condition is good, or unless the entire neoplasm can be removed; hence it is important to determine whether or not the bladder, upper part of the vagina, or uterus are involved, and whether the growth is confined to the lower portion of the rectum. If the finger cannot reach healthy mucous membrane removal is not justifiable. Implication of the ischio-rectal fossæ or of the lower part of vagina does not necessarily contraindicate excision.

For the operation the patient should be prepared by a dose of oil twenty-four hours previously, and within two hours of the operation, a warm-water enema. The patient is then anæsthetized and arranged in the lithotomy position with the buttocks raised by a hard pad. A strong sharp-pointed curved bistoury guided by the finger or speculum is passed into the bowel and by transfixion made to protrude through the skin at the side of the coccyx. The intervening tissues from this point to the anal margin are then cut through. If the incision is cleanly made and as nearly as possible in the median line

the hemorrhage will not be great and can be controlled by the pressure of a sponge.

A crescentic incision is now made, extending from the margin of the first cut to a point in the middle line in front. This cut should be made boldly and sufficiently deep to extend well into the fat of the ischio-rectal fossa. If the skin around the anus is healthy, the cut should be confined to the mucous membrane. The forefinger thrust into the incision will now readily separate the bowel from the surrounding tissue except at the insertion of the levator ani, where scissors should be used. A piece of sponge is now thrust into the cut to control bleeding, while the opposite side is treated in the same manner, when the vessels of both sides should be clamped.

The anterior wall is next separated by a careful dissection, which in the male is facilitated by a sound in the bladder. When the dissection is carried beyond the disease the bowel is drawn down with moderate force by a vulsellum forceps. The diseased bowel should then be cut off with strong curved scissors, clamping all vessels that bleed. Stitching the cut edges of the bowel to the anal margin should not be attempted, as it forms pockets in which discharges collect. A piece of rubber tubing five or six inches long is then passed into the bowel. Next a square of lint with a central hole to pass over the tube, is smeared with eucalyptol ointment and gently pressed into the wound, the space between the lint and the tube is packed with iodoform wool, and the whole retained with a T-bandage.

Thirty-six hours after the operation the wool is removed, the lint being left in position and syringed with carbolic solution.

As the wound heals it is important to guard against contraction, which would cause an intractable stricture. If contraction is noticed during cicatrization, a full-sized conical rectal bougie should be daily passed until the wound is healed.—*British Medical Journal*, October 12, 1889.

Turpentine in Whooping-cough.—DR. VASCENCELLOS DES POST employs turpentine in whooping-cough by dropping it upon the child's pillow, thus causing constant inhalation of the vapor, as an enema, in capsules, or with belladonna in the following formula:

℞.—Tinct. belladon. . . .	♏ xx.
Ol. terebinth.	f ʒij.
Syr. althææ	f ℥iij.—M.

Of this a tablespoonful may be given every two hours.—*L'Union Médicale*, October 12, 1889.

Ichthyol in Skin Diseases.—DR. KARL KOPP has used ichthyol in a number of different skin diseases and with varying results. He prefers the ammonium sulphichthyolate, which he not only applies externally in ointments and solutions, but also administers internally in the form of pills. He finds that patients can take more than a drachm daily without harm.

Dr. Kopp's results were as follows:

In acne rosacea and pustulosum, the external and internal use was of great benefit after seven months' treatment. Applied externally only, the results were less marked than when given internally alone.

In acne vulgaris, ichthyol combined with daily applications of sublimate solutions, occasionally produced good results, but oftener not.

Angioma was not influenced by the drug.

Facial erysipelas was usually cured in from three to five days by a 30 to 50 per cent. ichthyol ointment spread upon linen.

Acute eczema was, in a few cases, improved, but in many more aggravated; and in chronic eczema the effect was in no instance curative.

Prurigo mitis improved under the local application of a 10 per cent. solution, but the improvement was invariably temporary. In prurigo ferox the results were even less satisfactory.

In a few cases of senile, neurotic, and idiopathic pruritus, the internal administration of ichthyol, combined with the external application of a 30 to 40 per cent. ointment, diminished the itching, but in others this effect was not apparent.

Seborrhœa sicca capitis was uninfluenced by the drug, The statement of Unna that after the scraping of lupus or removal of papillomata, the application of pure ichthyol caused satisfactory cicatrization, Dr. Kopp is unable to confirm.—*Monatshefte für praktische Dermatologie*, October, 1889.

Herpes Genitalis.—The *Gazette de Gynécologie* of October 15, 1889, gives the following directions for the treatment of this condition: When the skin has a considerable tendency to dryness, frequent applications of vaseline should be made; or if, on the other hand, moisture is present, this powder should be used:

Subnitrate of bismuth . .	15 grains.
Tannic acid	75 "
Powdered starch . . .	3 ounces.

When the surface is washed, the water used is carbolized, and, if ulcerations occur, they are to be treated by astringent dressings, but never by cauterization.

Suspension in Locomotor Ataxia.—In the *Lancet* of October 19, 1889, the results of treatment by suspension in fourteen cases of tabes are tabulated by Drs. Russell and Taylor. Three of the cases improved while undergoing the treatment. One improved at first, but during the last three weeks he had a relapse, and when he left the hospital was certainly worse than he had been a month before. Another case had, between April and June, a course of twenty-five suspensions, but experienced no improvement. A month after this the ataxy became much more marked, and the suspensions were resumed. After ten suspensions he began to improve, and this improvement was maintained until he left the hospital. Considering the negative result of the first course of suspensions in this case, the improvement during the second course can scarcely be regarded as anything more than a coincidence. One case said that he thought he walked better and was more steady, but neither Dr. Ormerod nor the house-physicians, observing independently, could say that there was any improvement to be seen. In another case commencing optic atrophy was the prominent symptom, and although the patient himself said he thought his vision was better, careful testing did not confirm this.

In the cases in which improvement did occur, this consisted in a less ataxic gait and a greater steadiness in standing. In no case, however, was there ability to stand with the eyes closed, nor was there a return of the knee-

jerk or of the pupil reaction to light. In one case the shooting pains were relieved somewhat, but in none of the cases had they been either a recent or a prominent symptom.

In the greater number of the cases it will thus be seen that there was no improvement. Most of them remained practically in the same condition, but in more than one there was an evident retrograde tendency.

Injection for Uterine Cancer.—In the *Gazette de Gynécologie* of October 15, 1889, we find the following treatment, as recommended by CHERON:

Salicylate of soda . . .	100 grains.
Salicylic acid . . .	15 "
Tincture of eucalyptus . .	2½ fl. oz.
White vinegar . . .	1½ pints.

Add one or two tablespoonfuls of this mixture to two pints of warm water, and inject into the vagina several times a day until the disagreeable odor is destroyed.

The Use of Naphthol in Typhoid Fever.—BOUCHARD, in the *Gazette Hebdomadaire* of October 4, 1889, recommends the use of this substance in the treatment of typhoid fever. The method carried out is as follows:

As soon as the disease is discovered to be present, calomel is given amounting to from four to eight grains, divided into two doses. On the next day the naphthol is administered, either alone or with the salicylate of bismuth, or, better still, with the salicylate of magnesia. If the diarrhœa is severe, the following treatment is to be employed: β-Naphthol thirty grains; made into ten powders, and one of these given every few hours. If the looseness of the bowels persists, salicylate of bismuth is to be added to the dose, three grains every two hours.

On the other hand, if constipation is present, salicylate of magnesia is to be employed in the same dose.

Treatment of Pigment Spots in Pregnancy.—MONIER, in the *Monatshefte f. praktische Dermatologie*, recommends the following formula for the treatment of this annoying condition:

White precipitate . . .	1½ grains.
Oxide of zinc (pure) . .	4½ "
Castor oil	2 ounces.
Cacao butter	2 "
Essence of roses . . .	q. s.

To be applied night and morning.

Butylchloral in Facial Neuralgia.—LIEBREICH recommends butylchloral in facial neuralgia, using doses varying from fifteen to forty-five grains a day. The formula employed is as follows:

Butylchloral . . .	45–75 grains.
Alcohol	2½ fluidrachms.
Glycerine	5 "
Distilled water . . .	4 fluidounces.

Of this the patient is to take a tablespoonful at a dose.

Surgical Treatment of Peritonitis.—At the recent French Congress on Surgery the following views were announced:

PROFESSOR DÉMOSTHÈNE, of Bucharest, advised that in tubercular peritonitis the abdomen be opened, the cavity washed with boric solution, and drainage continued as long as there was discharge. By these measures he believes that the patient is rendered more comfortable and life prolonged. In purulent peritonitis, he thinks the same treatment should be adopted if the case is seen early and is in fairly good condition. If in this disease operation is delayed the results are unsatisfactory. Localized purulent peritonitis should be treated as an abscess in any location. Professor Démosthène does not consider sublimate or carbolic solutions inadmissible, but seems to prefer boric acid.

M. DEMOUS, of Bordeaux, believes that if laparotomy is undertaken in peritonitis it should be done early, and thinks that physicians are too tardy in summoning the surgeon.

M. BOUILLY insists that in purulent peritonitis a large incision is unnecessary, but the peritoneal cavity must be thoroughly washed out with a boric solution or a 1 : 6000 sublimate solution. This should be done with a canula sufficiently long to reach all parts of the cavity.

M. DENUCÉ washes the peritoneal cavity with sterilized water and sponges, and for drainage uses iodoform gauze.—*L'Union Médicale*, October 12, 1889.

Belladonna in Renal Calculi.—In the *Provincial Medical Journal* for October, DR. W. MURRAY reports three cases in which the passage of renal calculi was hastened and pain quickly relieved by the free administration of belladonna. In all cases the drug was pushed until the well-known toxic symptoms were marked. Dr. Murray believes that the action of belladonna here is analogous to its action in intestinal obstruction, a belief that seems entirely rational.

Hypodermatic Use of Mercury in Syphilis.—The Berlin correspondent of the *Medical Press and Circular* writes that DR. HEBRA still pursues this course of treatment of syphilis at the Polyklinik, but admits that it is not so successful on outdoor patients as those under special care, as one has not the opportunity of modifying the dose to the individual wants.

He uses one injection daily of a 90 per cent. solution of sublimate with 6 per cent. of sodium chloride added. Of this solution, one centigramme of the sublimate is injected, or 0.15 of a grain. The injection is made in the nates, going deep into the gluteal region on the right and left side on alternate days.

Twenty injections during three weeks are the usual number allowed for complete recovery. Infants and adults are treated on the same principle, with the dose modified according to age. Exceptions to this rule are found, however. Hebra mentions a case that he is now treating at the clinic as an example of difficulty. The case has been under his notice for three years, and been injected 350 times. No effects of the drug can be obtained, but severe sickness when pushed.

The danger of abscesses forming at the site of injection is small, as he has used it for five years and now says he never had a single untoward case, although he has treated 800 such cases, and at an average of 20 injections that would be 16,000 injections. The pain of injection may be raised against the treatment, but this seems to the patients a trifle.

The advantages gained far more than counteract the disadvantages. The drug immediately enters into the circulation, where the mercury seems to combine with the albumin and form a very stable compound, as it is long before it is thrown off from the kidneys. Accord-

ing to Bockhart's experiments, it is three weeks before anything is seen after commencing the use of this chloro-soda-mercuric compound.

The drug administered thus is observed to act rapidly and last longer than in any other method. As to the period of delay before any sequelæ appeared, he could not give figures, as many of the patients would go to the nearest attendant for medical advice.

Electrical Stimulation in Apnœa during Anœsthesia.—DRS. H. A. HARE and EDWARD MARTIN, in an exhaustive study upon stimulation of the diaphragm in apnœa, conclude that by far the most important practical point to be gained from their observations is in regard to the methods commonly used in the application of electricity to persons who have ceased breathing, particularly during the action of an anæsthetic. While few text-books give any specific directions concerning the practical application of such methods, those that do so force the physician to a method at once dangerous and impractical, for the directions usually given are to place the positive pole on the phrenic nerve as it crosses the anterior scalene muscle at the root of the neck, the negative pole being pressed against the lower margin of the ribs, and a rapidly interrupted current being used with the purpose of causing contraction of the diaphragm by the direct action of the electricity upon the nerve. Even theoretically this is a possible source of danger, and practically they have proved danger to be an ever-present fact under its use. The cardiac inhibitory nerves run so closely to the phrenic fibres, and respond so readily to electrical stimulation that it is hard to imagine how they can escape stimulation if a current be used of sufficient strength to excite the phrenic nerves near by. By practical experiment they have proved that inhibition of the heart may not only be possibly brought about by this method, but that it is nearly impossible to avoid its production if the phrenics are to be reached at all.

The electric brush produces a more powerful effect upon the terminal extremities of the sensory nerves than any known method of stimulation. Far more powerful than the douche and than abdominal applications of ether, as recommended by Hare, it should be used under all circumstances when death threatens from respiratory failure. It should not, however, be applied to the neck, but a sponge electrode being placed at the base of the ribs the brush should be applied at intervals to the epigastrium, to be removed when inspirations result, and reapplied when breathing movements cease. If artificial respiration is being carried on by Sylvester's or other of the recognized mechanical methods, the wire brush should be applied during the inspiratory movements.

It would seem probable that in those cases where the use of electricity has been resorted to, the return to life has been the result of reflex stimulation rather than a direct effort on the phrenic nerves.—*University Medical Magazine*, November, 1889.

Sulphate of Copper Injections in Dysentery.—In the *Lancet* of October 12, 1889, DR. W. EASLEY reports a case of dysentery cured with rectal injections of sulphate of copper. The patient had been suffering for about a month with the usual symptoms of the disease, and had been treated to little purpose with bismuth, gallic acid, and ipecacuanha. Finally, when he was growing worse, a solution, consisting of ten grains of sulphate of copper and one drachm of tincture of opium, in four ounces of water, was injected high into the rectum by means of a soft-rubber catheter. The injection caused no pain, in a few hours tenesmus was relieved, and blood ceased to pass. On the two following days a small amount of blood reappeared, and the injections were repeated, but from that time convalescence was rapid.

Intestinal Obstruction.—DR. GELPKE reports in the *Correspondenzblätter für Schweizer Aerzte* four cases of intestinal obstruction, of which two had been operated on—one with success—and two had been successfully treated with metallic mercury. From these cases he concludes that quicksilver is a valuable remedy in cases of obstruction, and that the metal seems to be quite innocuous to the system if not too long retained. It had been so retained in one of the two cases in which four teaspoonfuls of quicksilver had been given, and the feces and urine of the patient contained the drug for twelve weeks. There were other distinct symptoms of mercurial poisoning, such as great emaciation, excitement, loss of hair, and some stomatitis. The other patient, on the contrary, showed no signs of mercurialism whatever. He considers that in hernia it is generally advisable to commence the abdominal section from the orifice of the sac. Finally, considering the uncertain and not very successful attempts of laparotomy, he would not operate before other means, such as quicksilver, have been tried for from four to six days.

DR. S. V. REITZ, in the *Centralblatt für Chirurgie*, reports the case of a laborer suffering from obstruction of the bowels who, after three days' fruitless administration of purgatives, was brought to the hospital. Fecal vomiting was present, and a tumor could be felt on the left side of the umbilicus. Enemata of water by the long tube, though as much as six pounds of water were injected, were unsuccessful, but the vomiting and sickness improved after repeated washing out of the stomach. The next day the patient was considerably worse, and fecal vomiting returned, with cold perspiration, restlessness, meteorismus, a pulse of 120, and a temperature of 100°. After the enema with the long tube had been again used, and the stomach repeatedly washed out, without any improvement, seven drachms of bicarbonate of soda in five ounces of water were injected into the rectum, followed by three drachms of tartaric acid in the same amount of water, and the anus closed. The patient, who was on his knees and elbows, complained at once of severe abdominal pains, and in five minutes the injection came away with exceedingly offensive flatus. Shortly afterward the patient felt considerably better. In three hours the enema was repeated with half the previous doses, and was shortly followed by a large loose motion, and by a second later on. The patient completely recovered.—*Lancet*, September 21, 1889.

Sulpholeinic Acid has been called "polysolve" by Mr. H. Wilson, of Manchester. This product is produced by the action of sulphuric acid upon any kind of vegetable oil, and when concentrated is a yellow viscid liquid. It is capable of dissolving a large number of organic and inorganic substances, two per cent. of sulphur, three per cent. of iodoform, twenty-five per cent. of camphor, etc. —*The Pharmaceutical Journal of New South Wales*, September 16, 1889.

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SATURDAY, NOVEMBER 9, 1889.

THE CHOICE OF ANÆSTHETICS IN LABOR.

ALTHOUGH there are still a few aged practitioners who assert that it is wrong to use anæsthetics in labor, chiefly on the ground that the Almighty intended women to suffer in childbirth, the majority of the profession recognize the fact that the proper employment of some transient pain-relieving agent is a procedure almost as much in the line of duty to the parturient woman as the safe delivery of her child. That these drugs are often abused there can be no doubt: either they are pushed to such an extreme that the uterine muscle is relaxed and does not expel the fœtus, or fails by its contraction to prevent post-partum hemorrhage; but such objections hold good in every case where a drug is wrongly employed, and should not militate against a proper use of a medicinal substance.

With a regularity equal to a quotidian malarial paroxysm, the medical journals of the world, and more particularly of the English-speaking peoples, break out into long discussions as to the values of the various anæsthetics, the dangerous effects of chloroform and ether, and the assertions of masses of professional men arranged in opposing lines, which on the one hand support chloroform with a fervor only equalled by their opponents, the advocates of ether. The questions concerning these facts are now under study and discussion, and we cannot forbear the opportunity of pointing out what we believe to be the true aspect of the case.

The most enthusiastic supporters of chloroform for professional favor cannot, and do not, deny that the drug has a far larger list of deaths than has ether, even when the administrators were skilled physicians; and on the other hand, the advocates of ether cannot take exception to the statement that it very commonly produces nausea and vomiting with irritation of the lungs, all of which symptoms are peculiarly distressing in abdominal diseases or wounds. No one, we believe, will assert that death occurs as suddenly from ether as chloroform. The one is essentially a cardiac and respiratory paralyzant, the other a cardiac stimulant, except in overwhelming doses, and a respiratory stimulant until large amounts are given. As a consequence of this it at once becomes evident that in the hands of any person chloroform is the more dangerous drug of the two, and when employed by the unskilled nurse or physician possesses power for the greatest harm. Further than this, chloroform acts dangerously upon the heart in two ways, both of which may be present at once, and act immediately after the first whiff of the drug. It may stop the heart by stimulation of the vagus nerve or by paralysis of its muscular fibres. Indeed, many deaths from chloroform have occurred after the earliest inhalations and not after its prolonged employment. Idiosyncrasy has also a prominent part in its lethal power, and no number of previous anæsthetizations can be regarded as evidence of safety in an individual case. Ether kills by a slow failure of respiration, or very rarely, probably never in those cases where it is given to a healthy man, by failure of the heart which is progressive and not sudden. The one shows its danger signal, the other strikes its death-blow as does a bullet in the heart.

We do not wish to be understood as universally condemning chloroform; far from it. We believe that in many cases it is preferable to ether, but in the case of a healthy man there can be little doubt that the latter is the safer drug. Neither of them is to be condemned, for both have their parts to play. The surgeon and accoucheur should not be asked whether he uses chloroform or ether for all cases, any more than whether he employs morphine for all patients suffering with insomnia. There should be no factions in the profession in this respect, and no preference be shown to either drug by any body of men. The laws which are to be laid down are founded on therapeutic reasoning, not on dogmatic preference. No one has a right to

take the patient's life in his hand where it is so lightly balanced that nothing can save it should it suddenly fail, and for this reason ether is to be the more generally employed. On the other hand, the presence of acute or chronic bronchitis, of acute or subacute renal disease, of dilated or fatty heart, seems to us to call for the employment of chloroform.

In the former states the large amount of ether given is apt to irritate the lungs and the kidneys, or in the state of excitement and struggling so to strain the heart that the danger of cardiac failure is imminent. The same reasons hold good where atheromatous bloodvessels exist, and where, in consequence, apoplexy is feared from the struggles and increased blood-pressure produced by ether. The number of deaths during labor due to chloroform inhalations have been surprisingly few, for what reason we know not, unless it be that only a very little of the drug is generally given. There are no deaths from ether in the same state. The disagreeable preliminary signs of the inhalations of ether may be avoided if it is given so diluted with air as to anæsthetize the fauces before it is pushed in a concentrated form, and the after-symptoms of nausea and vomiting are rarely seen in parturient women, unless its use is excessive. Finally, we may be allowed once more to insist upon the statement already made, namely, that each has a field of its own and that neither one can be used to the total exclusion of the other.

HYPODERMATIC MERCURIAL INJECTIONS IN THE TREATMENT OF SYPHILIS.

THE modes of administering mercury are, fortunately, numerous. In many cases in which the need of this drug is most imperative, the gastro-intestinal tract is so irritable as to preclude its administration *per os*, and compel recourse to inunction or fumigation. Both these methods are open to objection: the first on the score of cleanliness, the second on account of the elaborate nature of the proceeding and the publicity which it is almost sure to involve. For these reasons the addition of mercury to the long list of hypodermatic medicaments was a welcome and, there is good reason to believe, a permanent one. This opinion may be maintained in spite of the fact that the latest report on the treatment of syphilis by hypodermatic mercurial injections is rather unfavorable.

LELOIR and TAVERNIER (*Journal des Maladies Cutanées et Syphilitiques*, No. 3, 1889) have practised 1573 mercurial injections in syphilitic cases of all grades of intensity, and in every stage of the disease. Of these injections, 875 were made with calomel suspended in vaseline; 642 with yellow oxide of mercury suspended in vaseline; and 56 with "gray oil," as in the following formula:

Vaseline	40 grammes.
Ethereal tincture of benzoin .	5 "
Purified mercury . . .	20 "

Of this mixture one-third of a Pravaz syringeful was injected every ninth day.

The authors believe that this method of treatment can never come into general use, and state that a number of their hospital patients preferred discharge to submission to it.

Its sole advantage is, in their opinion, the rapidity with which it causes erythematous and other syphilides to disappear from the integument, its action upon mucous syphilides being slight. Of the three substances employed, calomel is the least, and "gray oil" the most effective.

The objections to the method are: violent pains, lasting, on an average, from one to three days, sometimes much longer; paresis of the lower extremities; vertigo and cephalalgia; diarrhœa, etc. In no instance did the injections cause suppuration.

In conclusion, Leloir and Tavernier state that in the immense majority of cases they prefer mercurial inunction to hypodermatic injection of mercury. They found that cutaneous eruptions disappeared quite as rapidly under treatment by inunction, and mucous eruptions much more so. The eruptions having disappeared, they keep their patients in a condition of "mercurial impregnation," by means of pills of bichloride or protiodide of mercury, and repeat the frictions at variable intervals. This treatment is continued during one or two years, and iodine is withheld until the second year. They believe that by such a plan of treatment the best results are to be secured, and their great experience entitles these views to the most respectful consideration.

REVIEWS.

A TREATISE ON GOUT. By SIR DYCE DUCKWORTH, M.D. Edin., etc. With Frontispiece and Illustrations. 8vo., pp. 476. Philadelphia: P. Blakiston, Son & Co., 1889.

"I have bin very careful to write nothing but what was the product of careful observation. Soe when the scandall of my person shall be layd aside in my grave,

it will appear that I neither suffered myselfe to be decieved by indulging in idle speculations, nor have decieved others by obtruding anything to them but downright matter of fact."

With these quaint words we find the opening page of this interesting book strewn; words which, arising as they did from the immortal Sydenham, represent a desire too little seen in scientific and clinical studies nowadays; and which form with other abstracts a proper prelude to a thorough study of a condition little understood in any of its parts, and one which, with its sister, rheumatism, stands as a rebuke to the medical progress of the day.

While recognizing the complexity of the subject in hand, the writer seems to us to have written an unusually clear exposition of a state usually hopelessly confused and unreal, and apparently has followed, almost everywhere, the quotation just given. He has pointed out the relation between gout and other morbid states, and adheres closely to the theory concerning the dependence of disease upon the existence of distinct diatheses; an adherence which he himself recognizes as one which, at the present time, is apt to bring a storm of adverse criticism upon his head. It is impossible in these pages to review thoroughly so complete a study and one upon which the author has expended so much care and clinical research. The disease is defined, its pathological nature is studied, and its pathogeny followed with the care of an accurate clinical student of medicine. The question of its hereditary transmission is fully considered, and an interesting chapter is devoted to the states which are believed to be similar in the lower animals. In the last chapters the question of therapeutics is thoroughly discussed, and we are glad to see that no less than one hundred and six pages are devoted to this subject.

The only chapter which we are disappointed in is that upon "Pyrexia in Gout." We turned to these pages with the hope that we might at least find some careful study of the manner in which such variations in temperature may occur. No such observations are made and nothing is said concerning the hyperpyrexias which sometimes come on suddenly in gouty people. Even under the heading of "Retrocedent Gout to the Brain," no mention of such a state is to be found.

Sir Dyce Duckworth has written a very useful and interesting work on gout. He does not seem to have drawn about it a vast amount of contemporaneous literature nor of experimental study, but has brought forth a book which typifies its author in its careful and perhaps laborious treatment of a disease concerning the character of which clinicians must know more than those given to original research. Written on the soil where gout in all its forms delights to revel, a wealth of cases naturally adorns its pages and a colored figure shows a state common enough in England, but more rare in this country, *i. e.*, gouty deposits in the eyelids.

To those who are interested in these troubles and who find patients with sufficient English blood to possess the ailments of their grandsires, we heartily recommend the book. Written in an unusually interesting style, it is easily read and will give such information about the treatment of gout as will enable the ordinary practitioner to benefit his patients by its perusal.

A COMPEND OF PHYSIOLOGY. By ALBERT P. BRUBAKER, A.M., M.D. Fifth edition. Revised and enlarged. Illustrated. Philadelphia: P. Blakiston, Son & Co., 1889.

WITH such a book as this one before us it is almost impossible to give anything more than a notice of the fact that a fifth edition has appeared.

To review a quiz compend is an unnecessary task, since it is not supposed to present any new views nor to be worthy of such a dignity. To say anything in the way of criticism concerning a book which students have rejoiced in up to a fifth edition is equally difficult, and to find fault with a compilation which has been added to by an active teacher during years of experience is to seek for those little flaws which are present everywhere in every work, and singularly absent in this. The only just criticism which we can make is in regard to the tables, which give with mathematical exactitude the chemical constituents of certain secretions or parts. Practically, the student is never expected to burden himself with such figures, and a compend is supposed to deal only with what he must know. The book before us teems with interesting facts, and we shall shortly expect to see a sixth edition appear on the publishers' shelves.

STUDENT'S AID SERIES. Vol. I. 12mo., pp. 200. New York: G. P. Putnam's Sons, 1889.

THIS is the first part of a series bearing the marks of this well-known American house, although the authors are residents of England. The volume is divided into three parts, all of them on diagnosis. Parts I. and III. are by J. Milner Fothergill, while Part II. is by Thorowgood. The latter considers diagnosis from its physical standpoint, while Fothergill writes on semeiology, and "what to ask" when searching among the symptoms for the signs of disease. Both these articles can be read in Fothergill's *Handbook of Treatment*, but they are undoubtedly valuable enough to make the possessor of this little book a fortunate purchaser. The type is very small, and the ink is unevenly distributed; a fault common in books printed in England, but which are sent over to take an American imprint.

SOCIETY PROCEEDINGS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, October 9, 1889.

THE VICE-PRESIDENT, JOHN B. ROBERTS, M.D., IN THE CHAIR.

DR. LAWRENCE WOLFF read a paper on

THE CHEMISTRY OF THE FUNCTIONAL DISORDERS OF THE STOMACH.

DR. FREDERICK P. HENRY read a paper on

THE DIAGNOSIS AND TREATMENT OF FUNCTIONAL DISEASES OF THE STOMACH.

(See THE MEDICAL NEWS, October 26, 1889, p. 449.)

DR. H. A. HARE: I wish simply to suggest a possible explanation of the results of one investigator referred to by Dr. Henry, who found a large quantity of hydro-

chloric acid in the stomachs of persons who had been fasting. Dr. Beaumont and others have found that any foreign body introduced into the stomach will cause a secretion of gastric fluid. I do not see why such an outpouring of fluid might not be produced by the introduction of the rubber tube.

DR. J. P. CROZER GRIFFITH: I wish simply to bear testimony to the value of the tests for hydrochloric acid presented to us this evening, and to say that if the method devised by Dr. Wolff proves one by which the clinician can make a quantitative analysis rapidly and easily, I think much will have been gained. Perhaps many hearing Dr. Wolff speak, and knowing how conversant he is with chemical procedures, may think these manipulations are beyond our skill. Speaking as a clinician who has no special knowledge of chemistry, I can say that I have used these tests for several years, and with great satisfaction. Methyl-violet has proved reliable and delicate, as has also Congo paper. Probably I have failed to obtain the proper variety of tropæolin, though two different kinds have been used, for success has attended none of the trials I have made of it. With Günzburg's test I have no experience. The principal difficulty which we encounter in this country lies in securing the consent of the patients to the withdrawal of the contents of the stomach.

As is well known, attention was first directed to the subject by the investigations of Riegel and others, with reference to the mutual relation of hydrochloric acid and carcinoma of the stomach; the claim having been made that in this disease free hydrochloric acid is always absent, and the peptic strength of the gastric juice diminished. Much strife has arisen over the matter, which has nothing to do with the subject under discussion tonight, except that these investigations led to the study of the secretion in functional disorders of the stomach. An interesting point in this connection which seems to have been undoubtedly proved is, that in the majority of cases of dyspepsia we are not dealing with a diminution of the gastric secretion of hydrochloric acid. It is poured out too soon, or in too great quantities. We are, therefore, working on a wrong basis if in every case of dyspepsia we straightway administer pepsin and hydrochloric acid. In many cases an affection which starts as a functional disturbance may end as an organic disease. There is no question that too much hydrochloric acid will produce gastric ulcer. Gastrectasia is due also to an excessive secretion of the acid, which, being secreted before the normal time for it to appear, interferes with the digestion of the starches. These consequently remain too long in the stomach, accumulate there, and by at last interfering with its motor power, produce the dilatation.

DR. JAMES TYSON: I used the tests which have been described by Dr. Wolff in a patient suffering with cancer of the stomach, with the results described. In this case it seemed that there was a deficiency in the hydrochloric acid of the gastric juice. My experience with tropæolin was similar to that of Dr. Griffith; perhaps for the same reason.

DR. S. SOLIS-COHEN: In the limited experience which I have been able to obtain from a few patients, I have been unable to confirm the clinical value and the diagnostic value of these tests. It may be through some fault of my own. With the phloroglucin-vanillin test and Congo red there was no difficulty in demonstrating the presence of hydrochloric acid. With all due respect to the eminent observers who have recorded their researches in this matter, I am unable to see that we are much advanced in diagnosis, of either functional or organic disease of the stomach, by these tests. As has been suggested, the very presence of the tube may interfere with secretion. Cases have come under my observation where the too frequent or improper use of the tube has rather aggravated the condition. I would not, however, decry lavage as a therapeutic agent. I use it constantly, with good results.

I have been much interested in the remarks in regard to the connection between lithæmia and nervous dyspepsia, and am satisfied that many of these cases are intimately connected with the uric acid diathesis. There is a vicious circle: the dyspepsia, the neurasthenia, and the uric acid in the blood. Which is the first, and which the last, is difficult to determine. I have found that the uric acid element was the weakest part, and treatment directed under the supposition that we were dealing with a case of lithæmia produced results quicker than any other.

I have thought that much of the pain complained of some time after meals was due more to faulty intestinal digestion than to gastric disturbance, and with the use of pancreatin, properly guarded, I have relieved the pain. Hoffmann's anodyne is also useful in these cases, not only from its anodyne effect, but from its effect upon the pancreatic and intestinal secretions. These remarks are simply supplementary to those of Dr. Henry, and are not intended to take issue with what he said.

DR. ALBERT P. BRUBAKER: There is one symptom of impaired motility not alluded to by clinicians which may be of importance in the diagnosis of gastric disorders, and which is connected with the process of deglutition. According to the current works on physiology, after the food passes from the mouth into the pharynx it is grasped by the constrictor muscles, and by a rapid peristaltic action forced through the œsophagus into the stomach. The experiments of Kronecker and Meltzer have shown that deglutition is not due to a peristaltic action, but that after the food passes the isthmus of the fauces it is thrown by the action of the mylo-hyoid muscles through the œsophagus to the cardiac orifice, which is normally closed. If auscultation is made over the xiphoid process at the beginning of an act of deglutition, a sound is heard five or six seconds later, which is due to the squeezing of the bolus through the cardiac orifice, and which is denominated the "squeeze sound." Now, if there be a relaxation of the cardiac orifice, there is heard immediately after a swallow of water a different sound, which is denominated the "squirt sound," and which is due to the propulsion of the water directly from the pharynx into the stomach. The squirt sound is heard in cases of relaxed cardia with a tendency to eructations and vomiting.

DR. HARE: I happen to know something of the investigations to which Dr. Brubaker refers, as I was Kronecker's student immediately after Meltzer. Dr. Brubaker has left out an important point—namely, that if, after swallowing the food or water, the subject immediately makes a second swallow, the portion previously swallowed will at once be precipitated into the stomach. If, however, the subject refrains from making the second swallow, the six seconds will elapse. The patient must

be cautioned to resist this tendency to swallow the second time.

DR. WOLFF: If Dr. Hare's suggestion were correct in regard to the effect of the tube, the gastric secretion should always be hyperacid. The fact is, that it is often anacid and often subacid. I have made with Dr. Davis, at the Philadelphia Hospital, some examinations of the gastric secretion of normal infants, and in all the cases that we have examined in the predental stage, there has been entire absence of hydrochloric acid. In the gastric catarrhs we find a subacid condition whether the tube is used or not.

After exhausting other measures, and after enlightening the patient in regard to the use of the tube, I generally succeed in gaining his consent, and after it has been used a few times it can be introduced without difficulty. I had one case which would vomit as soon as the pharynx was touched, but by persistent effort he got so that he would swallow the tube himself and wash his stomach out every morning. He was admitted to the hospital in a run-down condition, weighing eighty-nine pounds, and unable to leave his bed from emaciation in consequence of pyloric stenosis. He was discharged, weighing one hundred and fifteen pounds, after two months' treatment. I presented him to the Atlantic County Medical Society a short time ago, well and hearty, weighing one hundred and twenty-six pounds. Lavage is, of course, not indicated in every stomach case, but in the severe cases, where there is not only functional, but also organic, trouble, the mechanical treatment is of the greatest benefit.

DR. HARE: Dr. Wolff has misunderstood my remark with reference to the irritation of the tube. Dr. Henry referred to the investigations made to determine by the passage of the tube, whether gastric juice was or was not secreted during fasting, without reference to acidity or hyperacidity. I pointed out that the introduction of the tube would cause a flow of gastric juice.

DR. HENRY: The irritation caused by the introduction of a soft-rubber tube into the stomach is very slight, and its stay in that viscus not long enough to produce the amount of secretion removed from it in the fasting condition. This varies from one or two to four or five cubic centimetres. In regard to the observations of Beaumont, I do not think the quality of the secretion which he obtained by irritating the gastric mucosa was ever accurately determined. It was probably nothing more than a feebly acid mucus.

It is a most significant fact that no mention has been made of pepsin this evening. From the lavish manner in which it has been and is still prescribed, one might suppose that the absence of this enzyme is the root of every gastric ailment, whereas investigations prove that it is almost never absent from the gastric secretions. The amount necessary for healthy digestion is very minute. Bourget, whom I have already quoted more than once, has shown that one-tenth milligramme of pepsin is enough to suggest well-marked digestive power.

Dr. Cohen complains of want of success with these methods, and of the difficulty of applying them. I confess that the difficulty is great. Dr. Wolff seems to have been unusually fortunate in persuading his patients to submit to them. There can, however, be no doubt of the great value of these researches. The discovery of the hitherto unrecognized condition of hypersecretion is ample reward for all the labor expended in their pursuit.

Reference has been made to the swallowing sound, the *Schluckgeräusch* of the Germans. It is fully described in Part First of Ewald's work on *Diseases of Digestion*, but he attaches little or no diagnostic importance to it.

PHILADELPHIA ACADEMY OF SURGERY.

Stated Meeting, October 7, 1889.

J. EWING MEARS, M.D., IN THE CHAIR.

DR. THOMAS G. MORTON read a paper upon

THE TREATMENT OF CLUB-FOOT; THE REMOVAL OF THE ASTRAGALUS IN EQUINO-VARUS.

DR. MORTON said that the results of treatment in many cases of congenital varus and equino-varus have been very unsatisfactory.

In no other department of surgery do we find so great a difference of opinion in regard to treatment, while the various kinds of apparatus which have been recommended for correcting the deformities are simply legion.

Congenital club-foot, which results from intra-uterine paralysis, may be mild or severe. More or less atrophy can always be found, and even under the most favorable surroundings is but partially recovered from; nerve supply to the limb is impaired, groups of muscles are affected, and, as in infantile paralysis, the stronger group overcomes the weaker and deformity follows.

Not only is the club-foot of less size than the foot of the normal side, but a comparison of the lengths of the limbs shows a general impairment of development, and with marked and permanent atrophy. This condition is more observable as the patient advances in life.

It seems reasonable to assume that the amount of deformity is in accordance with the period of intra-uterine life at which the palsy occurred. Paralysis coming on early in fœtal life is likely to give rise to the more severe forms of foot-deformity, as the tarsal bones, when in process of development, are then more readily distorted by muscular action; when palsy occurs toward the close of gestation, the tarsus is fully developed, and there is less opportunity for displacement.

There are cases of club-foot which readily yield to stretching, manipulation, and apparatus, or later on, possibly tenotomy, but the tarsal bones are in nowise involved in the deformity; such cases follow the palsy which occurs late in fœtal life.

There are others where the tarsus is found distorted at birth, with which, by immediate treatment and subsequent tenotomy, excellent results can be obtained, and the bones can generally be forced into proper position.

Without treatment, or by neglect after tenotomy, these cases, if the distortion is anterior to the astragalus, may require tenotomy, or tarsectomy, with or without open incision.

In some cases, after the open incision, a considerable gap is made when the foot is placed in the proper position, and in the subsequent healing of the wound we have a predisposition to the recurrence of varus; to avoid this, Dr. Morton turns upon the open wound surface a flap of integument, which may be taken from the dorsum or side of the foot.

Another class of cases are those where the nerve

lesion has probably occurred early in intra-uterine life, involving the entire tarsus; the astragalus is often found rotated and displaced forward, thus acting as a wedge, and preventing flexion and extension of the foot. Here tarsectomy only partially corrects the deformity; the same can be said of the open incision. In such cases, the removal of the astragalus must be considered, and if this bone is excised, the anterior tarsus need not be disturbed.

DR. MORTON exhibited several recent cases and photographs of astragalus excision, tarsectomy, open incision, cuboid and tarsus excision.

He was well aware that objections might be made to such radical operation as excision in young children. In the cases presented, the operation had been, however, for recurring varus, cases which are always difficult to deal with. He was equally confident, also, that in most cases of marked astragalus displacement, only a radical operation such as excision would give a satisfactory result. The operation is without danger, while the advantage of promptly correcting the deformity and avoiding the use of braces, will the sooner permit a development of the feeble limb.

DR. MORTON showed the following case: A boy aged fourteen, admitted to the Orthopedic Hospital, July 12, 1889. He had been operated upon for club-foot when nine months old by general tenotomy, and had used braces for several years.

Left foot: congenital equino-varus with great outward displacement and rotation of astragalus—its fibular articular process presenting subcutaneously in the central plane of the leg. Considerable atrophy. Right foot normal; three-quarters of an inch longer than the left.

On July 13th, the astragalus was excised through an incision extending in a curvilinear direction, from half an inch above the external malleolus to the base of the metatarsal bone of the third toe. The bone had to be split with cutting pliers before the calcaneo-astragaloid ligament could be divided; otherwise the operation was easy. Catgut drain and permanent antiseptic dressing. A right-angle tin splint was used.

August 11. Dressed for first time; foot in excellent position and condition; wound healed, save a very superficial ulcer.

18th. Wound entirely cicatrized.

28th. Brace was applied, and he was able to walk on the foot; no tenderness, and good ankle motion.

The next case shown, a boy aged three years, was admitted to the Orthopedic Hospital, August 21, 1889.

Right foot: congenital equino-varus, operated upon in infancy and tendons divided, but foot greatly deformed at present.

Left foot: also operated on previously, but in much worse condition, the astragalus being rotated through nearly half a circle, with its tibial articulating surface subcutaneous.

August 22. Left astragalus removed entire, without difficulty, through an incision extending in a curvilinear direction from just above the external malleolus to the base of the metatarsal bone of the third toe. Catgut drainage, permanent dressing, and right-angle tin splint. Open incision with extensive division of tendons in the right foot.

September 3. Feet dressed; right foot wound closed; left, slight superficial wound.

October 5. Left foot in excellent position. Right foot, some disposition to recurrence of varus; excision of astragalus is advised.

This third case was also a boy, aged two and a half years, who was admitted to the Orthopedic Hospital on September 26, 1889, with severe left equino-varus, the astragalus markedly rotated, and the tibial articulating surface subcutaneous; a curved incision was made from the external malleolus forward, and the astragalus removed. The wound was dressed in the usual manner, with gut drain, permanent dressing, and right-angle tin splint. There was excellent position of the foot in this case.

DR. JOHN ASHHURST, JR., said that he came to the meeting principally for the sake of seeing these cases, as he had heard Dr. Morton speak of his success with removal of the astragalus. He understood that in certain cases of relapsed club-foot, where tendons have been divided, but the after-treatment not properly carried out, it would be desirable to operate in this manner. In young patients who have not been previously operated upon he had met with no cases that could not be cured by simple tenotomy and division of the plantar fascia, with proper mechanical after-treatment. He, however, had considerable trouble with relapsed cases, and would be disposed to adopt this operation in such cases hereafter.

DR. DE FOREST WILLARD said that in the cases referred to by Dr. Ashhurst, and in large children or adults where we have hard, intractable feet with distorted bones, where the tarsal units have become wedge-shaped, where almost all the bones and tissues have become fixed, he thought that the excision of any bone which might be necessary to bring the foot into proper position was not only justifiable, but desirable. In the younger cases, however, especially under three years of age, he had never found feet which could not be brought into position with strong force after free division. He divides everything in the way, tendon, fascia, or ligament, and applies extreme force, which never produces sloughs or does any harm. Although he had torn ligaments and even a section from a bone, yet it had been nothing more than a simple fracture.

The results in these cases were, he thought, better than after the removal of a bone or a portion of the tarsus. If the astragalus is removed, we must have either anchylosis, or the calcaneum must form a new articulation with the tibia and fibula, which must be a painful process. In one of the cases shown to-night, that of the boy, the foot seemed more tender than would be found after the foot had been put in position by force.

He thought that removal of the astragalus was better than the removal of a wedge, for, in the latter case, there is usually anchylosis with stiff and rigid locomotion. In the majority of uncomplicated cases under the age of fourteen years, he believed that we are able, with manual and instrumental force, to carry the foot into position after free division. After this age it becomes exceedingly difficult and often impossible, and in many of these cases removal of the astragalus is a desirable operation, as it saves time and gives a better foot.

DR. O. H. ALLIS had not had sufficient experience with removal of the astragalus to speak of the ultimate results, but could confirm what had been said in regard to the immediate results. In a boy fourteen years of age, he worked for a year to bring the foot into good position,

but did not succeed until finally he removed the astragalus. He found that although the child had a shapely foot and did not need to wear an apparatus, yet there was no ankle motion, and the patients of Dr. Morton could not yet bring the feet to a right angle. What the condition will be six months or a year hence could not be foretold.

DR. MORTON, in closing the discussion, said that of course the operation for the removal of the astragulus is not for deformity of the anterior tarsus, but for those cases where the astragulus forms a wedge and prevents the foot from being brought into proper position. He had always been in favor of the forcible correction of club-foot when practicable, and years ago devised an instrument by which great force could be so applied. His experience was that we have had more relapses of club-foot and more unsatisfactory results than we are perhaps willing to admit. In the boy shown to-night, he did not believe that it would have been possible to bring the foot into a right-angle position without the removal of the astragalus. In regard to the boy's movement, it must be remembered that he has a more or less paralyzed atrophied limb which is much shorter than the other. A certain amount of awkward character in his walk is irremediable. He thought that the quicker we can put a distorted foot into the proper position so that the patient can plant the sole on the ground and dispense with apparatus, the better result we shall have.

DR. J. M. BARTON presented a patient showing

BONY UNION OF FRACTURED PATELLA, AFTER WIRING THE FRAGMENTS; PERFECT MOTION OF THE FOOT.

He had expected a case of fractured patella treated by the modified Malgaigne's hook, to have been presented here to-night by one of the Fellows. He had brought this patient to show the results of wiring the fragments. The patient broke her patella by muscular contraction about five months ago. Dr. Barton wired the fragments with a heavy silver wire a few days later; the wire remained in position for six weeks when it was removed. She had no symptoms except a slightly elevated temperature (from 99½° to 100°) for the first two weeks, and he feared that a low grade of inflammation was present in the joint, which might result in anchylosis, but his fears proved groundless. The limb was kept at rest in plaster for two weeks after the wire was removed, and she was then permitted to use it. The patient was shown, and it could be seen that she had now full use of the leg, walking without any limp. It was readily flexed past a right angle. The patella was as movable as its fellow of the opposite side. And as there were no inflammatory deposits around it, and its outline was well defined, there was no difficulty in deciding that firm bony union had occurred.

At the time of the operation the usual distinct veil of tissue, about one-eighth of an inch thick, was found lying over each fractured surface.

DR. JOHN B. ROBERTS said that he was inclined to think that many of these cases of supposed bony union are nothing more than exceedingly close ligamentous union. He had placed in the Mütter museum a specimen of what was supposed to be bony union after the use of the modified Malgaigne's hooks by Dr. Levis. When the specimen was fresh a little motion could be discovered between the two fragments; now when the specimen is dry, no motion can be detected. Wiring of the fragments seems to be a little more serious operation than the use of Malgaigne's hooks.

DR. DEFOREST WILLARD said the only case of bony union after fracture of the patella that he had been able to verify, occurred in an old woman who broke the patella by direct violence. He saw her within five minutes after the accident, before there was any effusion. There was free motion between the fragments, but there had been no separation, and the fragments were at once secured with adhesive plaster and a posterior splint applied. The dressing was kept in place eight weeks. Two years later he verified the occurrence of bony union by sawing the patella. There was never any swelling or inflammation of the joint, and no pain.

DR. BARTON thought the operation by wiring was not called for in cases like that described by Dr. Willard, where the fracture is due to direct violence. In cases where the fracture is due to muscular action the tissues over the patella separate after the fracture and fall between the fragments, preventing bony union. It is this tissue that causes the ligamentous union and which stretches so much afterward. Macewen found this veil of tissue in all of his cases, and Dr. Barton's experience had been the same. In one of his cases the double layer of membrane was fully three-eighths of an inch thick. When the fragments are brought in contact with each other and wired it seems impossible for bony union not to occur. As regards the risks of the operation, Macewen has had no difficulty whatever, and in the case coming under his own observation there had been no symptoms calling for alarm. It is probable that in this case the high temperature was due to something else than the wiring.

DR. ROBERTS presented the following

SIMPLE THOUGH PERFECT METHOD OF RENDERING INSTRUMENTS AND DRESSINGS ASEPTIC:

All have experienced difficulty in getting instruments and dressings absolutely aseptic, and he had always felt that unless his instruments and dressings were prepared by himself or a tried assistant, there was a probability that they were not germ-free. In order to sterilize dressings and instruments, he had made by a tinsmith an ordinary laboratory sterilizer with double walls, under which he places one or two Bunsen burners. The instruments are always kept in a tightly covered copper box which can be placed in the oven. If he gets the instruments in the box sterile by heat, he can carry it around for a week or more, as there is no tendency for dust to get into it. The handles of the knives must, of course, be of steel, or, if of wood, must be riveted to the blades. The box is placed in the oven and the temperature run up to 130° C. This is shown by the thermometer passing through the top of the open. He usually allows the instruments to remain in the sterilizer about two hours, though the temperature is not at 130° all of that time.

We know that moist heat is a better sterilizer than dry heat, but the objection is that subsequently one has to dry the instruments and thus run the risk of contamination. The instruments might be placed in the dry-oven after being in the steam, but this would complicate matters. If the temperature of his oven runs above 130° C. or 145°. C., the steel instruments become oxi-

dized, some becoming blue, some yellow, and some quite brown. Nickel instruments, however, are not affected at this temperature. He keeps the thermometer bulb about the middle of the oven, where he had found that the temperature is about ten degrees lower than at the bottom, so that if the thermometer indicates a temperature of 120° to 125° C., it was certain that it was about 130° to 135° C. at the bottom shelf. This temperature will scarcely scorch the dressings, but it does not do to go higher than this. All germs except that of anthrax are destroyed at a temperature lower than 130° C., and the bacillus anthracis is destroyed at this temperature. The staphylococci and the streptococci are destroyed at a lower temperature.

DR. J. EWING MEARS presented the following case of

RADICAL CURE OF HERNIA:

One year ago he presented to the Academy a patient on whom he had performed the operation for the radical cure of hernia. The operation was done in June, 1888, sixteen months ago. He again presented the patient at the expiration of this time in order that the Fellows might examine him and determine the result of the operation, in which there was no sign of a return of the hernia, although the man has been steadily working in a woollen mill where he is obliged to lift heavy bales. This was a case of entero-epiplocele. He opened the sac, divided the stricture, returned the gut, excised the omentum, returned the stump to the abdomen, then tied the neck of the sac with a double ligature and cut between. The proximal portion was twisted and secured in the internal ring with a long pin. The distal portion of the sac was sutured and allowed to remain, as it was found that the hernia was congenital, and by this plan a tunica vaginalis was formed

He also reported this evening another case of entero-epiplocele, on which he had operated three weeks ago. In this case the operation was performed in the same manner as in the one above reported, except that the distal portion of the sac was removed. It was an inguinal hernia of some years' duration in a woman. The omentum had become so much changed that it was difficult to recognize, and the sac was one-quarter of an inch in thickness. The omentum was ligatured in sections and removed, the stump being returned to the abdomen. The patient came into the hospital after prolonged taxis had been employed.

Adjourned.

CORRESPONDENCE.

RHUS TOXICODENDRON.

To the Editor of THE MEDICAL NEWS,

SIR: There appeared in the issue of this journal for April 20th a short communication from me upon the use of rhus toxicodendron in rheumatic affections, in which I mentioned the beneficial effects obtained in sciatica, lumbago, muscular and joint affections, and in varicose veins. In that letter I inadvertently omitted giving information in regard to the dose of the drug or the special preparation that I had used, and in consequence of this omission a number of gentlemen have written for information upon these points. The preparation I have referred to further on in this memorandum; but here I wish particularly to speak of the dose. My observations thus far have been confined to the exhibition of the drug in doses not exceeding one-half drop of the tincture made from the fresh leaves according to the formula of the *Pharmacopœia*, and for convenience I have this prepared in the form of a solution with dilute alcohol, in the strength of one part of the drug to ten parts of the solution, so that five drops of the solution contain one-half drop of the tincture. This is to be taken three times daily.

Since that time I have published accounts from different observers (*Therapeutic Gazette*, October, 1889), and the following note from Dr. Everett is offered with a view of confirming the statements I advanced last April:

Dr. J. O. Everett, of Edington, Illinois, under date of August 21, 1889, writes: "I have taken the rhus four times a day for two months. First the tincture you sent me; then the fluid extract. . . . It has helped me, but I am not yet entirely well. I have had sciatica nine months; have taken nearly every thing we give, with but little, if any effect, until I began with the rhus. I shall continue taking it for some time. I have given it in two other cases of sciatica, in which it worked splendidly. One case took it only four days, the other one week, and so far they have had no return of the disease. I gave it to seven cases of muscular rheumatism, in each of which it acted very satisfactorily, and a case of lumbago and one of torticollis were each quickly relieved.

Again, under date of September 29, 1889, he writes, asking me to send him some of the fresh tincture, as he is unable to procure it. He says: "Out of several lots I have used I have been disappointed in its effect:" and adds, "I am pleased to say that I am feeling much better. It has now been over one month since I have felt anything of my old trouble, sciatica."

Referring to my correspondence with Dr. Everett, I wish to say that on the receipt of his communication in the latter part of August, I wrote him to the effect that I was inclined to the opinion that the preparation he had been using was faulty, and accordingly I forwarded to his address a supply of what the importers, Messrs. Parke, Davis & Co., call the *German tincture*, which, I believe, is prepared according to the formula of the *United States Pharmacopœia* for the making of tinctures of fresh herbs—the maximum dose that I have used being one-half drop three times daily. My impression was thus confirmed that the tincture of the fresh plant was far superior to any and all other preparations, because as soon as he began taking this product his sciatica was relieved. Another evidence that this is the true interpretation may be inferred from the fact that he says in his first communication nothing afforded any relief until he began taking the tincture that I first sent him, along with the directions for its use. Whether this is assuming too much I submit to the judgment of the reader, and should like to have the matter tested by other observers besides myself, as I have shown that it is a drug of no small importance, and also that it can be used with safety.

JOHN AULDE, M.D.

4719 FRANKFORD AVENUE, PHILADELPHIA.

ANN ARBOR, MICHIGAN.

(From our Special Correspondent.)

To the Editor of THE MEDICAL NEWS,

SIR: Notwithstanding the great changes in the Faculty of Medicine in the University of Michigan, and the attempt which was made by one of the retiring instructors to induce the old students to go elsewhere to complete their studies, the department has more students than it had last year.

The fearful mortality which has followed the operation of ovariotomy in our hospital for the past two years promises not to be repeated this year. Prof. Nancrede has operated upon two very difficult cases, before the class, and both are recovering nicely.

The Regents have purchased twelve acres of land, and will begin immediately the erection of a new hospital, for which $75,000 have been appropriated. The site is a commanding one, overlooking the river, and the patients will not be compelled to complain of lack of air or of unsanitary surroundings.

The chemical laboratory, which already contains more than three hundred work tables, is being treated to an extensive addition. All the laboratories are filled to the utmost. Freshmen students are required to spend the afternoons of three months each in the anatomical, histological, and chemical laboratories. During the junior year, afternoons are employed in the laboratories of physiology, physiological chemistry, pathology, and hygiene. The afternoons of the senior year are devoted to hospital work. Many of the students approve of the proposed four years' course.

NEWS ITEMS.

The Johns Hopkins Hospital Bulletin.—The Trustees of the Johns Hopkins Hospital have authorized the issue of a publication to be known as the *Hospital Bulletin*. It will contain announcements of courses of lectures, programmes of clinical and pathological study, details of hospital and dispensary practice, abstracts of papers and other proceedings of the Medical Society of the Hospital, reports of lectures and all other matters of general interest in connection with the work of the Hospital. Nine numbers will be issued annually. The first number will appear in November, 1889. The subscription price will be one dollar per year, and subscriptions may be sent to the Publication Agency of the Johns Hopkins University, Baltimore, Md.

A Professorship Endowed.—It is stated that Peter Graff, of Worthington, has announced the gift of $25,000 out of the estate of his son, Charles H. Graff, M.D., who died recently in Duluth, Minn., to endow a professorship in Pennsylvania College at Gettysburg, to be known as "The Dr. Charles H. Graff Professorship of Hygiene and Physical Culture." Dr. George D. Staley, of Lebanon, formerly of Harrisburg, has been chosen to fill the Chair.

Reception to Dr. Rihl.—On Tuesday evening, October 29th, at the Colonnade Hotel, a reception and banquet were tendered to Dr. Henry W. Rihl, upon his return from Europe, by members of the Northern Medical Association and other professional friends. The following gentlemen were present: Drs. Hulshizer, Fischer, Pepper, Da Costa, Mitchell, Longaker, McBride, Nightingale, J. L. Rihl, Q. P. Kellar, Shriner, McDowell, Dieterich, Hornor, Gibb, Collins, Hess, J. S. Walker, Knorr, Vogler, Bochroch, Bissey, Ott, Strittmatter, Maylau, Oliver, Strobel, Rohle, Stern, Teller, Bobb, Beates, Horn, Gaus, Steinbach, Taylor, Updegrove, Hohnes, Deaner, Mills, J. B. Walker, Love, Roberts.

The Southern Surgical and Gynecological Association holds its session at Nashville, Tenn., November 12, 13, and 14, 1889, and has issued a preliminary programme. The meeting promises to be a large and successful one. About forty papers by eminent members of the Southern profession are already on the list.

Johnstown Health Bulletin.—In issuing this, its last bulletin, in reference to the health of Johnstown and the Conemaugh Valley, as affected by the great flood, the State Board of Health has its most serious obligation yet to perform—that of urging upon the people in the most emphatic manner the necessity and the duty of becoming themselves the protectors of the public health. If the success which has attended the efforts of the Board to prevent the occurrence of a pestilence such as has invariably followed like disasters in the past, has impressed upon their minds this lesson: that accumulations of decomposing animal and vegetable matter near human habitations are always dangerous and never to be tolerated, and that in thickly settled regions the only way to avoid such accumulations is by the creation of specially constituted authorities charged with the duty of their prevention and removal, clothed with full power and provided with sufficient means to enforce their own regulations—the direct and immediate benefits which its presence here has conferred will be trifling compared with the far-reaching good which will have been thus indirectly accomplished. If, on the other hand, the assistance rendered by the State has unfortunately been to lessen the self-reliance of the citizens, leading them to look outside for the performance of a function of self-government which belongs rightly to themselves alone, then the greatest work ever undertaken by a State Board of Health will have been prosecuted in this valley with results which will be far from an unmixed good. If the simple precautions which the Board has been exercising in the matters of sanitary inspection, disinfection, and the removal of garbage are at once dropped, the Board will not hold itself responsible for the consequences. The municipal authorities of all the boroughs lying along the Conemaugh and Stony Creek rivers should unite in constituting a Board of Health, to which should be confided the protection of the health of the entire district. The organization of this Board should be on the plan authorized by the Legislature for cities of the third class. It should consist of five of the most intelligent and reliable citizens, appointed without reference to locality or political preference, whose term of service should be limited only by their failure to perform properly the duties of the position. Such a Board, adopting the model ordinance of the State Board of Health as its code, and faithfully executing its provisions, would speedily become a pattern for all sanitary organizations throughout the Commonwealth.

The Board feels that it may well congratulate the citi-

zens on the standard of health which has been maintained during the trying period in the face of so many adverse influences. Their cheerful acquiescence in the decisions of the Board, which must often have appeared to them onerous, and their brave and resolute temper, have had a considerable share in conducing to this result.

BENJAMIN LEE, M.D.,
Secretary State Board of Health
of the Commonwealth of Pennsylvania

JOHNSTOWN, Oct. 12, 1889

Nashville Prison Congress.—The Annual Congress of the National Prison Association of the United States will convene in the Senate Chamber of the Capitol at Nashville, Tennessee, at 10 A. M., Saturday, November 16th, and will continue its sessions until the evening of Wednesday, November 20th.

The objects of this Association, as defined in its constitution, are: (1) The amelioration of the laws in relation to public offences and offenders, and of the mode of procedure by which such laws are enforced; (2) The improvement of the penal, correctional, and reformatory institutions throughout the country, and the government, management, and discipline thereof, including the appointment of boards of control and other officers; (3) The care of providing suitable and remunerative employment for discharged prisoners, especially such as may or shall have given evidence of a reformation of life.

THE thirteenth annual session of the American Academy of Medicine will meet at Leland's Hotel, Chicago, Ill, on Wednesday and Thursday, November 13 and 14, 1889.

THE Vienna *Weekly News* gives the following additional information regarding the Anglo-American Vienna Medical Association, to the initial movements of which attention was called last week. Such an organization would be a great aid if established in Berlin, Leipzig, and similar continental cities. A meeting of British and American physicians was held at No. 12 Landesgerichts Strasse, to consider the question of establishing an association for the purpose of furnishing all needed information to English-speaking medical men coming to study in Vienna. A large proportion of those now in the city were present. After a lengthy discussion, it was resolved to start such an association, under the title of "The Anglo-American Vienna Medical Association." A committee of management was appointed, with five members, representing different branches of medical study. *Their chief duty will be to supply information to new-comers, on their arrival, as to matriculation, medical courses, lodgings, etc.*, and, when necessary, to call meetings of the Association. The committee, on the occurrence of vacancies in their number, through members leaving Vienna, will fill these up as soon as possible. The office of the Association will be at No. 12 Landesgerichts Strasse, a few minutes' walk from the General Hospital. It was agreed that membership should be open to any British or American physician or medical student, on payment of an entrance fee of one gulden. The application to the authorities, necessary according to Austrian law, for permission to establish such a society has been made, and the committee expect that toward the end of October the Association will be in working order. Meanwhile, *letters of inquiry addressed to the President or Secretary will at once receive attention.*

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 29 TO NOVEMBER 4, 1889.

By direction of the Secretary of War, so much of Par. 2, S. O. 241, October 16, 1889, from this office, as relates to Anthony Heger, Lieutenant-Colonel and Surgeon, is amended to read as follows:

ANTHONY HEGER, *Lieutenant-Colonel and Surgeon.*—Is relieved from further duty in the Division of the Atlantic, and will report at once to the Major-General commanding the Army, for duty in this city.—Par. 5, *S. O. 252, Headquarters of the Army, A. G. O.*, October 29, 1889.

By direction of the Secretary of War, Par. 3, S. O. 241, October 16, 1889, from this office, is so amended as to grant ROBERT M. O'REILLY, *Major and Surgeon*, leave of absence for six months, with permission to leave the United States, to take effect November 1, 1889.—Par. 6, *S. O. 252, A. G. O., Washington, D. C.*, October 29, 1889.

TAYLOR, MORSE K., *Major and Surgeon* (retired).—Died, October 20, 1889, at San Antonio, Texas.

War Department, Washington, October 30, 1889. By direction of the President, WILLIAM H. FORWOOD, *Major and Surgeon*, is detailed as a member of the Army Retiring Board at St. Paul, Minnesota, convened by War Department Order dated January 12, 1889, published in S. O. No. 10, January 12, from Headquarters of the Army, vice Edgar A. Mearns, Captain and Assistant Surgeon, hereby relieved.—Par. 12, *S. O. 254, A. G. O.*, October 31, 1889.

By direction of the Secretary of War, WILLIAM C. GORGAS, *Captain and Assistant Surgeon*, is relieved from temporary field duty in the Department of the Missouri, and will join his proper station (Fort Barrancas, Florida).—Par. 2, *S. O. 251, A. G. O.*, October 28, 1889.

Appointments in the Medical Department, U. S. Army, as Assistant Surgeons, to rank from October 29, 1889: *First Lieutenant* CHARLES WILLCOX, *First Lieutenant* HARLAN E. MCVAY, and *First Lieutenant* E. B. FRICK.

By direction of the President, the Army Retiring Board convoked at Vancouver Barracks, Washington Territory, by War Department Order dated December 15, 1888, published in S. O. No. 292, December 15, 1888, from Headquarters of the Army, is dissolved.—Par. 1, *S. O. 250, A. G. O., Washington*, October 26, 1889.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING NOVEMBER 2, 1889.

NASH, F. S., *Passed Assistant Surgeon.*—Detached from duty in the Bureau of Medicine and Surgery, and ordered to the "Petrel," November 14, 1889.

BOGERT, E. S., *Medical Inspector.*—Ordered to examination preliminary to promotion to Medical Director.

NORTON, O. D., *Assistant Surgeon.*—Ordered to examination preliminary to promotion to Passed Assistant Surgeon.

KITE, I W., *Assistant Surgeon.*—Ordered to examination preliminary to promotion to Passed Assistant Surgeon.

STONE, E. P., *Assistant Surgeon.*—Ordered to examination preliminary to promotion to Passed Assistant Surgeon.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*